DOCUMENT RESUME

ED 115 278 IR 002 823

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TITLE	Information Facilities. First Year Report on Contract NIRT 1, Assistance in Telecommunications Planning. Volume 4, Communication Satellite Planning Center, Technical Report No. 2.
INSTITUTION	Stanford Univ., Calif. Stanford Electronics Labs.
SPONS AGENCY	National Iranian Radio and Television, Tehran.
PUB DATE	15 Aug 75
NOTE	97p.
EDRS PRICE	MF-$0.76 HC-$4.43 Plus Postage
DESCRIPTORS	Annotated Bibliographies; *Archives; Catalogs; Facility Utilization Research; Film Libraries; *Films; Information Centers; *Information Retrieval; *Information Storage; Surveys; Tape Recordings; Television; *Video Tape Recordings
IDENTIFIERS	Columbia Broadcasting System; Library of Congress; Metro Goldwyn Mayer; National Archives; *National Iranian Radio and Television; Universal Studios

ABSTRACT

In response to a request by the National Iranian Radio and Television (NIRT), a study was conducted to see what types of film and video archives presently exist. Archives can be classified into three types: (1) production archives used as resources in the making of other films and tapes, (2) film studio archives used to store prints for future reproduction, and (3) scholarly archives where films of historical interest are housed. The media collections at the National Broadcasting Corporation, Universal Studios, Metro-Goldwyn-Mayer, the National Archives, and the Library of Congress were visited and examined with specific reference to the temperature and humidity of their storage facilities, the basis of collection, cataloging, retrieving, and the number of personnel. To further assist NIRT, the Educational Resources Information Center (ERIC) prepared an annotated bibliography about media archives and supplied details about its own computer-based information processing service. Appendixes include: (1) an outline of a Tymshare retrieval system for films and film transcripts, (2) an annotated bibliography on media storage and retrieval, and (3) instructions and price information for the ordering of ERIC services. (EMH)

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ED115278

VOLUME IV

INFORMATION FACILITIES

First Year Report on Contract NIRT 1

Assistance in Telecommunications Planning

Submitted to

Mr. Reza Ghotbi
Director General
National Iranian Radio & Television
Tehran, Iran
August 15, 1975

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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IR 002 823

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Technical Report No. 2

2/3

ACKNOWLEDGEMENTS

We gratefully acknowledge the assistance of the following graduate Research Assistants in the analysis work and preparation of this report: Elspeth Elliot and Richard Zackon.

We also acknowledge the assistance of Henry Breitrose, Associate Professor of Communication, for his help in analyzing and preparing data for this report.

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Chapter 1
Introduction and Recommendations

This chapter reports on an investigation of various methods of storing and retrieving television film and tape materials and related written texts, in response to NIRT's desire to acquire a modern archive system for the NIRT national network. Such a system should have the flexibility of handling production, distribution, and broadcast demands, and should encompass film, audio-tape, and text. In addition, there will be a need for storage and retrieval of materials such as experimental equipment used in ETV programs. This is considered a less difficult version of the problem of storing and retrieving film or tape, and is not considered explicitly in this assessment. The system should be designed in close collaboration with NIRT staff, and should be predicated on adapting the most reasonable systems technology available to the unique demands of NIRT.

Six site visits were made to ascertain the nature, day-to-day routine, and generalizability of currently functioning facilities. While relatively full descriptions of the site visits appear in Chapter III, it should be made clear at the outset that no system visited fully fits the needs of NIRT.

We are, however, convinced that the system currently in use at CBS News in New York comes closest to fulfilling the needs of NIRT for fast, accurate and flexible storage and retrieval of film, video-tape, audio-tape, and written text, and that considerable economies of time and cost can be obtained by the adaptation of the CBS News Model to NIRT's specific needs. The system would also be able to handle inventories of non-textual materials.

> Recommendation: Considerable long-term economic advantages would derive from designing the NIRT Archive on the basis of immediate use of electronic data processing equipment.

Conversations with archivists and inspection of various facilities clearly demonstrated that the only situation in which computer-based cataloging seemed to operate reasonably was in a situation which used purpose-designed computer software and intelligently adapted hardware. Attempts to adapt to other systems, such as the use of MARC at the Library of Congress, or the

management inventory systems at NBC, were inappropriate to user needs. Further, the time and energy required to convert later from a manual to a computer-based system were excessive in the light of existing day-to-day demands on staff.

Recommendation: Any search and retrieval system should be oriented to the specific needs of the user and the users should be intimately involved in the design of the system.

The needs of television broadcasting, often calling for short deadlines and unique terminology, are not the same as the needs of other archive and library facilities. These differences must be accounted for in system design. The purpose of a television archive facility must be to respond to program producer and programming staff needs. Similarly, if such a system is to operate efficiently and reasonably, program personnel must be aware of their responsibility to be systematic and accountable in their use of materials.

Recommendation: The additional cost of using computer-driven microfilm cassettes for the storage of materials originally on paper suggest that this is a most reasonable system for handling program-related written materials. Beyond the savings in storage, such a system is recommended because of ease of access.

Recommendation: Television film and tape libraries differ significantly from traditional film archives to the extent that material must be maintained in an environment which is tolerable to work in for long periods of time. Because access time must be short it is impractical to let materials stored at low temperatures slowly adjust to human working conditions. We recommend storage temperatures of 65-70 degreees Farenheit and 50 per cent relative humidity as a reasonable compromise between storage requirements of film and tape and acceptable human work climate. Purpose-built storage shelves are not necessary except for the fact that film and tape removal may be easier if the materials are stored vertically rather than horizontally. Materials should be stored in a central location, preferably in close proximity to laboratory, editing, and transmission facilities.

Recommendation: Staff training should, at minimum, consist of an arrangement by which two persons, the Archive Chief and his or her deputy, be associated with CBS News in New York for several months. Subsequent to that, these persons should return to Tehran, and together with Sam Surrat, CBS Archivist, engage in training additional staff.

The unique tasks of NIRT suggest that training and system operation must be adapted to the working situation, and the wholesale importation of expertise, without modification to serve particular Iranian needs would be inappropriate.

Recommendation: The system most closely fitting the needs of NIRT for computer-driven microfilm is the MICROS system made by Tymshare, Inc., in Cupertino, California.

We are hesitant to recommend a sole source, but because of Tymshare's experience in helping develop the CBS system we can find no alternative one which would seem adequate to perform the tasks required in relatively short order. Tymshare has an Iranian affiliate (Mimax, 79 Avenue Shah, Telephone 61 10 34), and service on the system will be available in Tehran. In addition, Tymshare is prepared to provide remote programming services from their main offices in Cupertino, California, using satellite data transmission links, should this be desired and its costs be deemed reasonable. They have a similar arrangement with CBS in New York, and this is an attribute very strongly appreciated at CBS. A preliminary proposal from Tymshare is included as Appendix A.

It is possible that NHK in Japan, or RAI in Italy, may have a system appropriate for Iran, about which we have not yet obtained full information. We are still exploring the possibility of an NHK or RAI system as an alternate to the CBS system and will send information when it is available.

Recommendation: An Educational Resources Information Center (ERIC) system at NIRT should be helpful to NIRT's ETV operation.

Specific implementation recommendations for an ERIC at NIRT are detailed in Chapter IV.

Chapter II

Overview

The function of a television production archive is fundamentally different from other modes of storing and retrieving film and tape materials. The differences derive from the end uses of the materials stored. We have determined that there are three general modes of utilizing stored original film and tape materials. production-oriented television archives, conventional film studios, and scholarly archives. These modes will, for the purpose of this report, be referred to as types of archives, although in common usage they may carry descriptive names as "film libraries," "collections," and generally "vaults."

A. PRODUCTION ORIENTED TELEVISION ARCHIVES

With the coming of television a new kind of archive was necessary. The typical television production and transmission facility has a considerable amount of programming which is pre-recorded on film or tape or interspersed with electronic and film materials. In addition, many live transmissions are recorded for future use. From time to time, copies of program elements may be desired for secondary uses, such as picture, music, and effects tracts for versioning into different languages. Obviously, this represents a storage problem of a complicated order. In addition, a broadcast facility typically maintains a news and public affairs division and an education division, concerned with accessing previously produced materials (i.e., programs, sequences, or individual shots). The circumstances of television production are inevitably beset with problems of time shortage and deadlines, and retrieval should be fast and certain.

Most television facilities will maintain files in the form of paper records of program scripts, news scripts, and research materials. It is essential to be able to access these materials with speed and accuracy.

Types of materials accessed in broadcast facilities:

(1) Complete programs
    (a) Transmission copies
    (b) Elements
        1. Picture
        2. Composite track
        3. Narration track
        4. Dialog track(s)
        5. Music and effect track(s)

(2) Newsfilm
    (a) Sequences aired
    (b) Sequences not aired
    (c) Shorts not used in sequences
(3) Short-term storage
    (a) Material for versioning with variable return date
    (b) Material leased with firm return date
(4) Audio tape storage
    (a) Completed programs
    (b) Program elements
        1. Voice tapes
        2. Music tapes
        3. Sound effects tapes
(5) Written material storage
    (a) Broadcast scripts and transcripts
    (b) Program research materials
    (c) Administrative correspondence relative to individual programs or program series
    (d) Utilization materials
        1. Utilization guidelines: General and by Program or Series
        2. Utilization instructions: General and by Program or Series
        3. Evaluation Designs: Formative and Summative
        4. Evaluation Instruments: Formative and Summative
        5. Evaluation Results: Formative and Summative
    (e) Other written materials

After examining a number of situations which deal with the storage and retrieval of film and tape materials, it is our opinion that the needs of NIRT are best served by a computer-based search and retrieval system for film and tape materials and a computer-driven microfilm system for the storage and retrieval of written records. We believe that the best system of this sort currently in operation in the U.S. exists at CBS News in New York and that adaptation of such a system to the specific needs of NIRT can be accomplished in a reasonably economical manner. More information is being gathered on systems in use at NHK in Japan and RAI in Italy.

B. CONVENTIONAL FILM STUDIOS

Commerical producers of motion picture film are essentially concerned with the storage and retrieval of original film materials for purposes of duplication, i.e., the manufacture of release prints, and, to a lesser extent, the storage of original materials not utilized in previous production ("out-takes" and "overs") for potential use in future production. These materials are generally referred to as "stock footage". Most commercial film producers store the stock footage separately from the cut negative, fine-

grain or interpositive, and printing negative from which release prints are derived. The stock footage original materials are generally held intact, and when used in a production, a copy is made for inclusion in the new production.

Typically, the vaults of a motion picture studio have temperature and humidity controls to store their materials in climatic conditions which provide as close to the optimal conditions recommended by the manufacturers of the film as is economically possible. In most cases, however, no attempt is made to store materials with known degenerative qualities, such as color-negative, in more permanent formats (i.e., three-color separations on black and white film of archival quality). In addition, no studio, with the exception of those producing a great deal of film material for television, maintains vast holdings of original materials in their vaults. Materials thought to be of no potential economic value are either donated to national film archives, such as the Library of Congress, for use by scholars, or are destroyed. In previous times the silver potentially recoverable from black-and-white motion picture film was of sufficient economic incentive to cause the destruction of a great many films, which, in retrospect, would have had important artistic and cultural values.

In general, the major traffic of materials in and out of a studio vault will be to and from a laboratory. With relatively few destinations for the materials, problems of inventory control are limited, especially in those situations in which the studio maintains either its own laboratory or has a contractual or habitual relationship with only one laboratory.

C. SCHOLARLY ARCHIVES

The third mode of storing and retrieving film and tape materials is the Film Archive, in the classic sense. This is, in fact, an entity concerned with the preservation of film and tape materials for posterity, according to one or another set of assumptions about the responsibilities of the organization. For example, the International Federation of Film Archives (FIAF) to which the vast majority of national film archives belong, takes the position that the primary duty of any national archive is to store the film production of that nation. The Imperial War Museum in London, on the other hand, takes the more limited view that its collections should be consistent with its institutional task, and essentially concentrates on films relating to military issues, typically involving the British Commonwealth.

Because the national or topical archive is concerned with preservation for posterity, its mode of operation is typically somewhat more restricted than that of a commercial producer. Decisions about preservation are made on the basis of cultural rather than economic criteria. Much of the effort of the archive may be directed to finding the best existing copy of a film or the copy closest to the original negative, or to transferring films from temporal storage media, such as nitrate-base film, to more permanent acetate-base film. Access to an archive is usually quite limited, and the original materials or best existing copies are seldom handled. Most often, "viewing copies" are made, together with a protection duplicate of the original materials. The viewing copies are utilized for screening and study by scholars, and the protection copies are used to generate additional viewing copies when they are needed.

The national archive will often go to considerable pains to reprint material which has been distorted or deformed by shrinkage. They will transfer color material from one strip of color film, which inevitably will suffer from dye deterioration because of age, to three-strip color separations, which do not degrade with age. A full description of the work of the national archive is to be found in Preserving the Moving Image by Ralph Sargent.

Chapter III
Site Visit Reports

A. INTRODUCTION

There is considerable variability among the three typical kinds of film and television archives visited. For this reason two of each type were visited. Table III-1 gives a summary of the attributes of the facilities, and detailed discussion follows.

B. CBS NEWS

Two CBS News facilities are examined here: a production-oriented television archive and a film retrieval inventory control operation.

1. Production-Oriented Television Archive

Source: Judith Hole

The CBS News Division is located at the CBS Broadcasting Center, some distance from corporate headquarters. The Broadcasting Center took over a large warehouse and factory, converting it to meet their requirements. The film library is on the third floor, the sound section and video storage in the basement. Other storage facilities for older film are located at Fort Lee in New Jersey. The corporate library and a special projects library for books and transcripts reside in the corporate headquarters.

When it was decided to reorganize the film and tape libraries, CBS called on the services of Sam Suratt, whose background included work for the University of California at Berkeley and the Smithsonian Institution. He also had considerable experience in computerized retrieval systems. His modernization made more efficient the process of keeping track of vast quantitites of footage which grow at a daily rate of 40,000 feet.

The flow of film into the library begins with initial entry into an inventory control program. When a film story is assigned, it is given an arbitrary and unique "assignment number", which is used as its log number for inventory purposes. The film assignment number together with several key descriptors is entered into the computer system. If a decision is made to use the film for broadcast, the "air-cut" of the film, that is, the material actually assembled and broadcast, is kept inviolate and cannot be subsequently re-edited. Material not broadcast is kept for a year, after which a

TABLE III-1

SUMMARY OF STORAGE ATTRIBUTES: SIX AMERICAN FACILITIES

		HOLDINGS				ACCESS			STORAGE		SHELVING		SPEED OF RETRIEVAL		SEARCH ACCESS POINTS	
NAME	FUNCTION	FILM	VTR	AUDIO	TEXT	MANUAL	COMPUTER	PLANNED EDP	TEMP.	HUMIDITY	HORIZONTAL	VERTICAL	FAST	SLOW	MANY	FEW
CBS NEWS	TV	X	X	X	X		X		70	50		X	X		X	
NBC	TV	X				X		X	70	?		X		X		X
UNIVERSAL	STUDIO	X			X	X		X	65	50	X			X		X
MGM	STUDIO	X			X	X			?	?	X	X		X		X
NATIONAL ARCHIVE	SCHOLARLY	X	X		X	X			[illegible]	50	X			X		X
LIBRARY OF CONGRESS	SCHOLARLY	X	X		X	X		X	70	50	X	X		X		X

decision is made as to which to keep and which to discard in order to avoid unnecessary duplication. Film is not kept unless it is of historical value or is thought to have potential uses in the stock-film library.

Shot lists and sequence lists of the air-cut and the unbroadcast materials are made, and each shot and/or sequence is entered into the computer with a unique identification number. Program producers are requested to generate copies of the materials rather than to re-cut them, but such action is not always possible under conditions of deadline pressure.

Film from the library is utilized in two modes:

1) In House: Out-takes from the original. When it becomes permanently filed it should be printed for use. Camera original is used for broadcast on occasion, but there is usually enough time to print a copy.

2) A straightforward stock film library: This is restricted to aired material with no CBS correspondents and contains no out-takes. The hard news film library and the documentary film library together account for 80 million feet of 16mm film. No full broadcast may be sold as stock, nor may the out-takes.

Some 35mm footage is still held, but is being transferred to safety film.

As of January 1974, 3/4 inch cassettes were made of all news broadcasts. Before video cassettes, an audio record was kept of all newscasts. Now the entire news broadcast schedule is kept on Sony cassettes. This requires the transfer of ten hours of Quad tape per week.

At CBS, the reporters and researchers keep their own notes, by tradition, except in cases where the story or program is of extraordinary importance. An attempt is made to get reporters and researchers to turn their notes and research materials to the central library where they can be coded, labeled with descriptors, and entered into the computer for search, as well as being transferred to microfilm for retrieval. This is a developing area within CBS and is still at a rather early stage of sophistication.

A recent policy decision at CBS called for the phasing out of film in favor of portable video-cassette location recording, using a portable color unit of high quality, such as the Ikegami and Sony color

video cassette records. Upon arrival for broadcast these tapes are transferred to 2-inch quad format with time-base correction, and are edited on a highly sophisticated computer-driven editing system, devised by CBS in conjunction with the Memorex Corporation, known as the "CMX System." The original recordings are kept in the videotape library, together with their "air-cuts" which, after editing and transmission on 2-inch quad tape, are permanently retained. The videotape library also retains the cassette recordings of news transmissions, which are made by technical personnel at the time of transmission. The library does maintain a playback machine, which can be operated by non-technical personnel.

From time to time outside broadcasts of news programs occur, such as the Watergate Hearings and the various manned satellite launchings, and these programs are videotaped and kept intact.

CBS stores some permanent material on video tape in Fort Lee, New Jersey, in temperature and humidity controlled vaults. Tape produced in 1959 has been played back satisfactorily. In the opinion of CBS the problems encountered with video tape result from the increasing sophistication in the technology of video tape recording and electronic cameras, rather than actual deterioration of the tape itself. To play a very old video tape, the current tape technology must be intentionally degraded to accommodate the technical standards which were utilized at the time of the original recording. This calls for considerable engineering time to set-up the tape machines and is costly in terms of the increased head-wear necessitated by the tape contact, play-back head tip contact, and tape tension required by older standards.

2. Film Retrieval Inventory Control Operations

Source: Neil Waldman, Director, Film & Video Library

Prior to 1954 CBS television used the services of Twentieth-Century-Fox Newsreel. Beginning 1954, they established their own newsfilm units.

New York and Washington are the major domestic bureaus of CBS news. Each of these bureaus assigns a unique assignment number to each film piece. The number carries a letter prefix which indicates its origin as either Washington or New York. In addition, the library provides service for the CBS-owned New York station (WCBS-TV), where local stories are distinguished by a letter prefix affixed to their unique number.

As film from New York or Washington arrives, it is logged on a traffic board, and details of location, reporter, camera team, and date are entered. The date, incidentally, is the date of entry into the library, rather than the date of production. Material from bureaus other than New York and Washington arrives without assignment number and receives such a number upon entry into the facility. If the film is not specifically earmarked for a particular program it goes to the library and is entered into the Film Retreival Inventory Control system (FRIC), which generates a computer inventory.

The FRIC system terminal operates by means of a series of prompts which inquire about essential information from the library employee handling the film as follows:

DATE

TITLE

REPORTER

SOURCE
(note: bureau location)

COMMENTS/RESTRICTIONS
(note: from accompanying documentation)

SUBJECTS

FOOTAGE

In practice, an individual may then make inquiry of the FRIC system to locate specific film items. The system will refer him to film can numbers, and the film cans are manually retrieved. A "dummy" can is then inserted into the film rack carrying the name of the person who has the film. The computer is also informed of this information, and will prompt "TO WHOM?". When film is returned to the Library it is measured to ascertain that the footage is accounted for, and the information about its return is entered into FRIC.

FRIC keeps a tight rein on the units. When the film is returned, the librarian measures the footage to verify that it remains the same as when it left the library. The sheet is marked accordingly. If not, up to three memos may be sent out to the unit and the person responsible. If it is still not returned, an addendum states "lost by unit X." Unit reports are typed out asking the producer where the film is and why it has not been returned. This does not, however, adequately prevent inhouse staff from exchanging film and leaving the transaction unrecorded.

The archivists work 21 out of 24 hours to keep abreast of the materials. The three hours remaining are to allow for cleaning. The library contains the open shelving area, the computer access units, filing rooms, shot listing rooms (with the appropriate technical equipment), and an SCM copying machine, for use with both paper and cards for files.

Film is processed in CBS labs in the same building, but prints for sale are done outside. Footage is shot on original color reversal. An archival quality master is made of films of great historic importance and then locked away. This is usually a fine grain reversal master, B-wind, with separate magnetic track.

Program transcripts are made in the special projects library from audio recordings. This is usually done overnight, after which the transcript is coded and indexed by date, using a variety of content discriptors. These transcripts serve as hard data for external queries regarding news coverage. CBS has developed its own descriptor glossaries. Every two months all accumulated broadcasting transcripts are photographed on microfilm in a cassette. By selecting the required transcript, through questioning the computer, the correct cassette may be inserted and the appropriate transcript reproduced in minutes.

The transcript section has a staff of four, each able to accomplish the indexing, editing, proofreading, and microfilming.

The CBS computer has a memory of 16K in core, and 220 Megabyte discs. All memory can be transferred to tape. Eight channels are currently available for entry and search. The computer contains all programing for FRIC and the microsearch system. The system was procurred from Tymshare Corporation.

The archive exists to serve the needs of the news service. It was stressed that archivists must be sensitive to news operations. It is up to the archivist to educate his colleagues to an awareness that it is by serving each others' needs best, that the service itself stands to gain.

There are about eight people working in the archival staff at CBS, including the following:

(1) Seventeen film librarians: All the librarians are highly versatile and well qualified. Abstract logic ability is a prerequisite in the use of the New York Times for determining descriptors. As a next step, CBS intends to hire specialists in disposition decisions (i.e., specialists in an area or a subject).
(2) Five videotape librarians.
(3) Five specialists in transcript retrieval: handling texts, microfilm, etc.
(4) Ten in special projects (i.e., clipping and assembling information on specific areas, including work for the corporation as whole).
(5) Twenty-three broadcast researchers.
(6) Four audio archivists.
(7) Two in the documentary film library: one librarian, one vaultman.
(8) One archivist.
(9) One deputy archivist.

Computerization at CBS began with the news and documentary film departments. The video section followed and finally the audio section. The computer is used by the audio department in special instances only, not as a routine procedure. For example, they will use it to locate input which is too recent to have been filed by their own department.

The audio tapes are the most comprehensive of any recording system. For instance, during the Soyuz/Apollo space link-up, there was one hour of filmed record, but the audio tapes were running all the time. Thus, there is a complete record for administrative purposes; also a producer may run through as many tapes as he wishes for background without incurring the heavy cost of employing a video tape technician, required to operate those machines under union contract.

The sound librarian distinguishes between what might be called "sound effects" and what he calls "actualities," that is, authentic sound recordings made on the spot. No "bank" of sound effects is kept,

although actuality sound may be sold to outside film-makers for use as sound effects. An example is political convention sound, which will be recorded "clean" to allow editing should the on-the-air commentator talk over one of the speakers. The sound archives are used by the Columbia Broadcasting Corporation to manufacture compilation records and cassettes for individual use or are combined with stills to make filmstrips of current events and the arts for high schools or libraries, as well as for use by outside film makers.

Two filing systems have been devised: (1) the "X" series, and (2) the Log Book.

a. The "X" Series

This collection consists of actuality cuts which have been aired on radio since 1952, usually of one minute in duration. The news and all radio broadcasts are gone through each day for any material of historic value and put on 1/4 inch tape on 10-inch reels. A log is made. In the X series, all entries are brief, perhaps as little as one line, and only contain the most salient sentences. While this process was originally carried out within the first twenty-four hours after broadcasting, it is now felt that by letting one or two months go by, a better historical perspective will be gained. Sample number: X7451-1 = X (series): 74 (the year): 51 (the 51st reel of the year) and 1 (the page number).

In practice, each one hour tape contains 2 to 2-1/2 days of actuality cuts from 30 to 45 different items. Each cut is transcribed in the log page as briefly as possible, using the actual words spoken. Each page of the log corresponds to a section of the tape reel designated by the insertion of leader in the tape. This makes for speedy location, as there may be four pages of log book to correspond with one tape, and three segments of leader allows for high speed location of the tape to correspond with the page.

The X series is typed up in multi-copy: one copy goes to the log book (one for each year), one copy goes into the box with the reel, and one goes in the vault book. Capitals are employed to denote the speaker.

If another well-known person is being spoken about, that name also is capitalized. Therefore, it is indexed under the speaker first, then the subject, then the general category: e.g., president address, etc. The indexer will annotate at the side of the page any other general category (e.g., "USSR"). There are usually three or four references per cut.

b. The Log Book

This deals with all that is excluded from the "X" series: the complete broadcasts, raw sounds, total coverage of events. This is not cross-referenced at all. Frequently mentioned categories are selected and filed under the appropriate two letter prefix: for show (FN = Face the Nation), for presidents (PN = President Nixon, PF = President Ford), for important addresses (AD).

On 5-inch by 7-inch cards, the date, broad category and general description is given, but not detailed. Similarly, the broadcast transcripts are given without details, are numbered, and are kept separately, as are copies of the New York Times Presidential statements.

This system uses unique numbers, for example: Sample Number: AD 75016, which is the date inverted (16/05/75 = 750516) and acquisition number all in one. Its use, however, implies a great knowledge of the material. It is timesaving in the sense that PN, AD, etc. are already established as categories. This second system is comprehensive and thorough, a necessary adjunct to the faster X series system. Its drawback is the minimal information held in the file.

The indexer sits in the newsroom with the file of current cards on hand. As the cards fill, they are transferred to the complete file, which is kept in the vault with the tapes.

The tapes are shelved alphabetically beginning with AD, etc. Standard metal shelving is used, since the archivist does not have to worry about magnetism. The archivist is planning to install moving shelves to save space. In the second vau.., a system of shelving is used which involves more time assembly, but saves in using hardboard shelves instead of steel ones. This is the metal structural type seen in use in most offices.

The cans may be inserted vertically with no actual shelf in place, as they can set between the metal supports, resting on the structure's sides. According to Mr. Werber, the Audio Librarian, the tapes should stand to preserve them best. (Other archivists prefer that the cans be laid one on top of the other.)

Two files of transcripts are kept in the vault and the full collection of file cards.

A constant rather than a specific temperature is stressed for the vault. At CBS it is maintained at about 68 degrees. Humidity is also kept constant, though the exact rate was unknown. The durability of an archival tape from 1947 with a life expectancy of 20 years was checked at the Library of Congress. Made of acetate, it is apparently in good condition. Now polyester (trade name "Mylar") tape has a projected life expectancy of 100 years. Discs made in 1938 in the archive have excellent sound quality. They are fragile, however, and should be copied. Tape cassettes are used by the reporters themselves on the job. Cassette storage can be very expensive, but it has been found that standard 3-inch by 5-inch file cabinets do the same job more economically than specially made cabinets.

3. Summary

The CBS system is the best we have observed. Concern with production problems is combined with rigorous thought and purpose-built technology to serve the various needs of a busy and sophisticated broadcast operation.

C. PRODUCTION-ORIENTED TELEVISION ARCHIVE: NATIONAL BROADCASTING COMPANY, NEW YORK

Source: John Haines
Supervisor, Video Library

The video tape library holds news program and commercial tapes for both local and network usage. The library is located within the RCA Building in Rockefeller Center with subsidiary long-term storage facilities at Fort Lee, New Jersey, a trip which can be made in two hours if the occasion demands. Because the building was not designed with film storage in mind, the allocation of shelving is determined by what weight the floor can support. Commercials and their records are held in one area, news and programming in another.

1. Commercials

Upon arrival, all commercials on film are transferred to two-inch quad tape cassettes. Two copies are made, and assigned code numbers. "C" before the call number designates commercial, and "F" designates that the original is on film. There is a computerized "ARIES" inventory retrieval system, which derives from billing and scheduling demands. Four letters and four numbers are assigned to each entry. This supplies positive identification, with little detail, viz: GFAB for General Foods, followed by four unique digits. The inventory lists the company, the production, length, shelf location, number, and disposal date, which correspond to instructions from the advertising agency. A ninety-day disposal period is assumed. Two weeks before the final disposal date the computer gives an automatic preparatory signal of four asterisks beside the item. The listing also includes whether the commercial is in black and white or color, and is able to supply information as to last date used, the number of times used, and whether it was broadcast on local or network channels. When the disposal date arrives, the cassette is erased and inspected.

Commercials are assembled one day ahead. A computerized schedule is issued from the Broadcasting Facilities ("Traffic") area detailing the required tapes in sequential order of bin storage. The initial assembly is on a time basis, showing only the first time required. When a tape is removed from its place on the shelf, an obvious dummy block is inserted with a label to identify it, and to indicate visually missing cassettes.

All pre-1968 reel-to-reel tapes are discarded. The technician in charge of degaussing keeps a random check on tape quality. At NBC Fuji and 3M tapes are used. They appear to be of similar quality, but using two sources allows NBC bidding flexibility.

2. News

At NBC some news is gathered on 3/4 inch cassettes. A unique number is assigned to each tape on the news floor and it is always referenced by this number. The tape is held until disposal instructions are received. The news department keeps a receiving log, and each item

is stored sequentially. Although the news for broadcast is transferred to 2-inch tape, all news to be stored is transferred at week's end to cassettes and the twenty-minute original cassettes are degaussed.

For program retrieval, when the title and topic are known, the location details must be obtained from the program analysis department. There is a strong need voiced at NBC for a computerized inventory system in this area, linked to the needs of other departments (i.e., business). This would be most advantageous in such areas as "space," "presidents," and "conventions." Of the 14,000 tapes (11,000 inventory and 3,000 local promotions) as many as possible are stored at NBC; the remaining are in New Jersey. As a separate card file is maintained for Fort Lee, it is necessary to check both the inhouse file and the Fort Lee file.

3. Cataloging

Filing is done by the standard readily identifiable numerical code. A materials arrival notice is filled twice a day, with four copies:

1 for traffic
1 for archive
1 for local standards records
1 for network standards records

Incoming tapes are categorized under show title:

1 copy = tape flow
1 copy = receipt
1 copy = for the cost accounting department file
1 copy = business office

The taped show record card is put on file, and transferred to the "erased" file when the tape is disposed of. There is an outgoing tape flow form for the return or erasure of tapes, with details of who authorized the erasure.

A librarian keeps records of each day's transmitted materials. A daily tape usage report is filled out by the video tape operators, to tell how many tapes of what length are in each category. On day 1, the show and tape serial number are listed, on day 2 it is annotated with the whereabouts of the tape: "hold", "outside", etc., then filed. There is a specific form for anyone who wishes to remove a tape from the library. This goes into the day's folder so that staff member can

see what needs to be put out. Although cumbersome, it serves well as a shipping or purchase record. It defines what people want to see, and keeps a tab on where everything is.

4. Personnel

Two non-union clerks: one for shipping, invoices, purchase requirements, typing;
One for commercials, checking routines, typing labels, program routines, contacting agencies;
Sixteen union library staff: one supervisor (union I-A classification - Group V), others (Group II).
One union person: checks tapes, does set-ups, repairs cassettes cleans, rewinds. He has some technical training.

A major problem in scheduling comes about from the fact that other departments want to borrow staff to cover as holiday relief. Generally, staff are agreeable because the archive is looked upon by many as an entrance point to more demanding television work. Requirements for personnel seem to include: being methodical, neat, having good memories, and some filing skill. A knowledge of the overall operation is helpful. There is a fairly high turnover, however, because the library operation is fairly hard, demanding work. It is also routine and unglamorous. There are eight job functions. Normally two weeks are given to become acquainted with the routine, and eight weeks to become proficient. It is necessary to keep the department functioning for twenty-four hours a day during the week, though staff is reduced over the weekend, particularly from early Saturday to early Sunday. The union contract allows for a shift differential of 22 per cent.

5. Summary

The NBC library is essentially designed to accommodate the needs of 30- and 60-second commercial scheduling within the structure of a profit-making television corporation. The conceptual basis of the library design seems to derive from conventional commercial broadcasting practices. Little attention has been given to the day-to-day demands of the program makers. Outside of the television commercial area, no efficient use of computers exists, and while the network has requested the library staff to devise means for the utilization of computer retrieval for program materials, little work has actually been done in this

area. One possible reason is that further computer retrieval design would necessitate a heavy investment in software in order to operate effectively within a partition of the existing ARIES system, which was originally designed to serve business and billing functions rather than to facilitate library operations.

D. CONVENTIONAL FILM STUDIO: UNIVERSAL STUDIOS

Universal City, California
Source: Allan Haines
Syndication Department

The administration offices of Universal Studios are in a long, low building with the dispatch and receiving room at the end, opening onto a yard where trucks may enter. Between the offices and the receiving room is the inspection room, equipped with splicers and viewers. An adjoining structure contains the stock footage storage area, consisting of small rooms opening off the street. The stock footage is kept in small metal pull-out drawers.

The film vaults are of reinforced concrete with sprinklers, necessitated by nitrate storage insurance regulations. The film stacks are of the "erector" type, fixed and mobile (tracked) units. At Universal, they rise to a height of 8 feet, but may go up to a height of 10 feet. The film reference number is put on white tape at the front of the shelf unit.

The adjoining laboratory of Technicolor uses modern, motorized shelving, on rails, moved by a light touch on the handle. They purchased the carriages and had the end panels made to their own specifications, saving 50 percent of the space compared to fixed shelf units.

1. Temperature and Humidity Factors

While it is admitted that in practice films in use are often left lying around in high temperatures and changeable humidity, a controlled environment is deemed important when considering permanent storage. The most common results of poor storage are shrinkage of film stock, change in color quality and cinching. For the latter, there seems to be no cure, but film stored on two-inch and three-inch cores seems to fare better.

Though nitrate-based film was discontinued in 1951-52, and no 16mm films were ever produced on this material, it is well to note that these films must be stored separately because the nitrate base gives off nitrous oxide which affects color stability, as well as decomposing over time. These films are stored in unsealed cans, in blockhouses with sprinkler systems.

Generally, the lower the temperature, the slower the deterioration of dye images in Eastmancolor, Fuji or Gevaert films. As they may change year-by-year, this has obvious effects when intercutting with an intermediate for titles, etc. Black and white is less critical. Acetate film, according to Universal, should be stored in sealed cans and taken out in advance of any use to allow for slow acclimatization to room conditions. The storage temperature recommended is 40°F to 50°F, preferably closer to the former.

Ideally, storage relative humidity should be between 35 and 40 percent.

Video tape has a higher tolerance for variable conditions. Significant temperature and humidity fluctuations should be avoided, however. Cinching can come about as a result of rewinding, resulting in horizontal lines on the screen.

Positive internal air pressure within the Technicolor building relative to outside air pressure reduces dust hazards.

2. Basis of Collection

Universal Studios use the vaults to store their own film and video productions. They also have extensive stills collections which come under the Publicity Department, a music library which stores the tapes from the sound department, 16mm magnetic tracks, 35mm "triple stripe" tracks which contain the dialog/music/effects tracks, and 16mm music/effects tracks for dubbing into foreign languages. Scripts are kept in "Central Files" in corrugated cardboard boxes. A master copy is kept permanently and more copies are Xeroxed when only one extra copy remains.

As well as the finished product, original films and copies for private screenings, fine grain pictures, original picture negative, sound track negative, positive track, positive print, etc. are kept.

3. Cataloging

Cataloging consists of a combination of computer print-outs and stock footage file cards. The Universal Studios' computer generates annual inventory, using a code number, title, year of release, and indicates whether the item is motion picture or TV product. There is a new book every year and new material is added throughout the year. The computer file, which is accumulated in batch mode and updated at intervals, is duplicated by a written log system enabling staff to have access to continually up-dated records. The log system consists of three books: television series, titles, and production numbers.

In short, program inventory access is provided only at three points: type of production (TV or theatrical), title, and production number.

Stock footage cards are kept in a separate facility which also deals with the administration of the footage. They are filed under how they can be used - "best shot building run by in a car", etc. The same shot may be filed under several categories. Three by five inch cards are used. They contain the can number, location, descriptive information (color negative/kind of scene/how it may be used) and a frame of the scene, inserted in the card. The edge number and original slate number are also kept on the card. The alphabetical files are ordered by categories.

A Traffic card keeps track of the usage: series, title, production, number, location, name, company, date out/returned. These are filed by series. When there are very many, alphabetical sub-categories are formed.

4. Retrieval

The Universal computer is at Kearney, New Jersey. When a film goes out, the card goes to the computer where it is entered. There is no on-line computer record available in Los Angeles. Veri-Visible systems in use in the record-keeping department serve the purpose of maintaining current records.

5. Staff

It was reported that in libraries of this sort, the jobs are dull and repetitive, and that the experience acquired has little application to anything else. Therefore, the employees should be dependable but not ambitious. Some considerable reading ability is necessary. The tasks may be divided as follows:

Record Keeping: when a film/video tape comes in, all information must be recorded (details as in the blue computer book previously mentioned). It may be labeled when it arrives, or its identification may be on the can or on an accompanying sheet. There's a need for correct terminology, standard language, and a knowledge of its application.

Keeping Track: records of callers, laboratories; ingoing and outgoing films.

Shelving: this may be functionally a part of the previous category or may be separate.

A suggested staff is: 2 record keepers, 1 supervisor, assistants, all of whom must have some literacy.

The staff work a five day week/eight hour day. The lab opens at midnight Sunday and works 24 hours until Friday night or Saturday morning. The studios may work 7 days/week 14/hour days. The vaults should, ideally, be linked to the lab. At Universal, it is not economically practical because of the cost of "dead" storage. Proximity to the laboratory generally means less chance of film going astray. The Universal vaults typically handle from 10 to 15 orders from the lab per day. Completed lab work may require two truck loads of 150 cans (10 to 12 shows). When returned, they are placed back on the shelves and the date is recorded on a card. One man spends his time discarding unwanted material. Packing film for shipment abroad presents unique problems: The film is weighed out of the cans, then weighed in cans, then weighed together, and finally, weighed again in the carton.

The staff comprises:

Supervisor - recording of film coming in
Shift boss - recording of film coming in
4 people - physical movement of film
2 people - in back vault
1 vault clerk - record keeping

6. Summary

Universal is a modern program and film production facility. It is busy in comparison with other simple facilities, but does not compare to the total traffic at a television network. Much work is duplicated because of irrational use of data processing equipment.

E. CONVENTIONAL FILM STUDIO: MGM STUDIOS

Culver City, California
Source: Roger Mayer
General Manager, Film Services Division

MGM maintains archives in a salt mine in Kansas for originals and prints, and storage facilities at Culver City for its working collection: the pre-completion stages of the film, and finished versions for viewing by visitors, stars, etc. Scripts are kept in traditional file boxes in Culver City. Still photos are kept in New York. This is an admittedly poor arrangement. Plans for a new facility were drawn up but no schedule of implementation exists currently.

As a result of MGM's experiences, Mr. Mayer strongly advised centralization of archival materials, including negative cutting, shipping and receiving in the same building. One advantage is the smaller number of personnel required. Stock footage of MGM is kept in small chambers off the central courtyard. Fitted wooden shelves have been built to contain shallow metal boxes placed side by side, one containing the positive print, the other the original negative material for each stock shot.

On a second floor there is a large area containing wire racks to a height of about 12 feet. Small cans, shelved vertically, are segregated from the containers holding 2,000 feet of film. A mobile ladder with adjustable safety legs enables staff to reach the higher shelves. In another large storage hall, filled with wooden shelving, feature film cans are stored horizontally, with all versions of the same film kept together in individual piles, corresponding to a list maintained in a master reference book. Because each pile is well spaced from the next, a single version is easily recognized and selected. This arrangement is not economical of space, however. Identification tabs on the shelves list what should be in each pile:

1557	Merry Widow	11R	Cyan Picture
(Prodn. No.)	(Title)	(length in reels)	Negative, etc. (Elements)

A feature of interest were large bins (two feet high by approximately fifteen inches) on the shelves, which contain trims, lifts, out-takes, and never-prints. They are loosely stored in small rolls: positive strips are identified by scene number, negative by edge numbers. It seemed unlikely that they could ever be accessed, at least in a systematic way.

1. Cataloging

Stock footage is cataloged in bound books, with frame insert and reference number.

Production books give detailed lists of shots that occur in any given production so that someone remembering a scene in a given film may track it quickly.

The background department maintains books of stills (black and white) taken from footage which can be back-projected - used little nowadays.

Films are cataloged so that each has a page/pages in an alphabetical series of bound books according to title. The catalog indicates only location. There is only one copy of this record.

2. Retrieval

The search is carried out in the bound books, kept for all types of footage in the same room. Vault number and shelf number are listed in the books. Titles are used for films, catagories by subject, location, etc. for stock footage.

3. Care

In a section of the same room which houses the reference books, an assistant checks the films and makes repairs where needed. Inspection of cans in storage seems informal, and no definite procedure was evident.

4. Staff

MGM recommends two persons to keep the records, with perhaps three assistants to handle the films.

5. Additional Information

A laboratory is on the MGM lot by tradition. This fact was stressed throughout, together with the idea that this arrangement would be entirely different if current management were starting from scratch. Eighty percent of the lab work is non-MGM originated.

6. Summary

MGM is essentially concerned with films in current release. They seem to have archival interests only in so far as material no longer in release may have some potential for future financial gain. The facility is antiquated and provided little information of use to NIRT.

F. SCHOLARLY ARCHIVE: NATIONAL ARCHIVES

Washington, D. C.
Source: William Murphy
Director, Film Division

The General Services Administration, through the National Archives and Records Service, is responsible for administering the permanently valuable noncurrent records of the Federal Government of the United States of America. These archival holdings, now amounting to more than one million cubic feet, date from the days of the first Continental Congress and consist of the basic records of the legislative, judicial, and executive branches of the government. While these research resources document significant events in the nation's history, most of them are preserved because of their continuing practical use in the ordinary processes of government, and the research use of scholars and students.

Among the holdings of the National Archives and Records Service (NARS) are extensive audiovisual archives consisting of motion picture film, still pictures, and sound recordings. Since its establishment in 1934, NARS has recognized the record character and historical value of audiovisual materials and has taken steps to ensure the preservation for future generations of stills, films, audio recordings, and video tapes from public and from private sources that relate to the history of the United States. Approximately 75 percent fall into the government category, 25 percent being private donations.

Today, the collection comprises 82,000 reels of motion pictures, including feature films, series of newsreels, unedited out-takes, training films and documentaries, dating from 1894; more than 5 million still pictures; and over 64,000 sound recordings dating from the turn of the century. Records are available for study but not for rent or loan, although copies may be purchased, subject to copyright or other restrictions.

1. Cataloging

When a collection is donated from a government agency, the Archive utilizes the agency's existing method of cataloging and indexing. This saves re-indexing time, but means that the collection remains a separate entity for storage, and requires the researcher to search several files. Shortage of staff, however, makes the use of this system more expedient than union cataloging. When a film arrives as a private gift, it is logged in and given an appraisal number. A letter to the donor certifies the deed and provides documentation as to the transfer of custody. The donation is appraised for historical value.

Every film is inspected manually upon entry. A record card is made out detailing physical condition and footage. It is entered in inventory control by a cataloger who makes a shot list and a summary for the file card. A source authenticity file is compiled of the releases, contracts, ownership rights with the same file number as the film, though filed separately. This card also specifies if a script is available. A production case file detailing transactions connected with the production is a necessary requirement for all government films. Inventory is on a computer format but at the series level only. The computer serves the entire National Archival collections, and is quite general. Therefore, "March of Time" will be specified, but each installment will not. It was suggested, however, that where there is a large collection with the probability of many questions, some sort of machine retrieval is worthwhile. A punched card system in use at the Imperial War Museum, London, was referred to in this connection.

There are two full-time catalogers who compile lists of titles only. A subject outline for catalogers is based on a Library of Congress list of separate headings, although there is a finer breakdown for World War I and II materials. Each film is numbered and this number serves also as shelf locator. The records are kept together by source with the original numbers as allocated by the original department, e.g., ATC = Air Training Command. With numerical as opposed to title control, the

card catalog corresponds to the numbers and is cross-indexed for the film subjects. There is a description of what the film shows -- major visual sequences rather than a thematic list. Physical characteristics (8 mm sound) rather than inventory items (MPSA, i.e. Matter Positive Acetate) are included. A shot list is absolutely necessary for unedited film. Five by eight inch cards are used, filed under the appropriate agency with alphabetical cross-reference. The National Archives recommends as good practice keeping subject information separate from inventory.

2. Physical Presentation

All films are either 35mm (white cards) or 16mm (blue cards). There is sufficient time to go through the footage for disposal of duplicates. Reductions to 16mm are made for color preservation copies, e.g. 35mm technicolor World War II footage. A 16mm safety film wetgate internegative may be made from a 35mm color nitrate print. 35mm safety film copies are made from 35mm black and white nitrate. After making a duplicate negative and a 35mm projection copy, the nitrate print is stored and kept as long as possible. The nitrate stock is held in Maryland, some 15 miles away from the Archives. The Archives serve as a repository for CBS newscasts. They are stored on 3/4-inch video cassettes. Black and white kinescope 16mm preservation copies are also held, as well as various formats of video records from government departments.

No systematic formal inspection is done of the stored film. Vertical storage is generally preferred. Raw stock cans are used for print storage. Antimagnetic precautions are deemed unnecessary for video. Shelves are of various types with hardboard or metal shelving segments. Storage temperature is held at around 70°F to 75°F and humidity at 40 to 60 percent. Ideally, the staff would prefer relative humidity of 50 percent. Sprinklers for fire are not used, and there are no air vents, but very sophisticated smoke detection devices were in place.

3. Staff

15 - lab personnel are separate, a part of the technical services division. Directly assigned staff are as follows:

1 supervisor

1 archivist -- reference area

3 archives technicians in the reference area. They have on-the-job training together with degrees in history and communications

4 film inspectors -- high school background plus inservice training

1 stacks person

2 catalogers -- film background.

4. Summary

The National Archives is similar to most scholarly archives. Fiscal constraints, lack of personnel, and a growing collection make certain shortcuts necessary, such as the maintenance of original catalogs of varying quality with each collection. The pace of work is slow, and users are generally satisfied with the compromises which trade speed and accuracy of search for size and scope of holdings. Highly skilled and experienced personnel are needed to aid users.

G. SCHOLARLY ARCHIVE: LIBRARY OF CONGRESS

Washington, D. C.
Source: Paul Spehr
Deputy Director, Film Division

Begun as a service to Congress and the film industry, the Film Collection is now used mainly by students and academics, 20 percent of whom are non U.S. citizens. The Library does not lend, but has good facilities for viewing films. There are 65,000 titles in the collection. The amount of material is extraordinary -- 135,000 cans of acetate film, 85 million feet of nitrate, of which five million feet are transferred to acetate per year.

Not all films produced in the U.S. are accepted by the Library, which has the legal right to compel deposit only of copyrighted material. Films which reflect social trends or convey a message about the U.S. society are selected for acquisition. Paul Spehr, Deputy Director, makes the decision

about documentary footage, by means of consultation and current reviews. The list of proposed acquisitions is then referred to Dr. John Kuiper, Head, Motion Picture Section, who makes the final selection; then it goes to the Reference Library.

Mr. Spehr is responsible only for the non-fiction material. A second officer makes the choice of fiction. All copyrighted American features are automatically taken. Not counting filmed television series, the choice is from among 800 to 900 films. If there is any doubt, the film is accepted. Uncopyrighted films are contributed largely on a voluntary basis, as there is no legislation requiring their contribution to the Library. However, should a company wish a film copyrighted, two copies must be sent to the Library. Mr. Spehr makes the point that this is a self-selecting process because of the cost of prints to the film makers. This tends to exclude the independent film-maker. The Library's dependence of the film-maker's initiative in copyrighting or depositing uncopyrighted films militates against a comprehensive collection.

1. Cataloging Procedure

On entry, a hand written card is generated with the shelf location, title and number of cans on a three by five-inch card.

The preliminary cataloger, typically a junior person, pulls the card, based on a previously chosen priority, and makes three initial determinations:

1) technical: scratches, etc. If a film is copyrighted, it may be sent back.

2) archival: the control aspect; from whom received, when, restrictions on viewing.

3) filmographic: subjects; date of release; director; cast; etc.

Two cards are made out, one for a public access file and the other for a limited access back-up file Yellow cards signify nitrate, white indicates safety film.

The term "archival quality" is not absolute. Three splices are the acceptable limit for a commercial film; more are acceptable for rarer items. If a master negative is received, a positive is made, and vice versa. Then the viewing copy is struck. Not all films have viewing copies, because of financial restrictions and lack of user demand.

The MARC computer system developed at the Library of Congress is used internationally and though not currently in use in the film division, could possibly be used there. However, the present computer implementation is not fast for access, and therefore might not be suitable for television application, and it is not appropriate for generating detailed print-outs. It is flexible in that one can pick out the fields needed, and can be run as an on-line system. (See Films, A MARC Format in the Annotated Bibliography in Appendix B.)

Steenback Film Viewing machines are used for viewing, and since there are no loans, there are no loan forms required. When a researcher wishes to view material, a request sheet is completed, an appointment made with a reference librarian, and an assistant gets the necessary material. Because a great deal of material is in the pre-print stage, it cannot be used for viewing. Therefore, not all materials are available to the researcher.

2. Staff

All staff are high school graduates and must have university training. Masters level librarians and history graduates are typical employees. A strong in-house training program is necessary for those with no previous experience. An ability to recognize people on screen is useful, especially for handling documentary and newsreel materials. An additional problem is the need to be aware when it is necessary to enlist the help of an expert, usually the senior cataloger. Cataloging for access and control is a most important aspect, and demands a sensitivity to user needs. The Library of Congress from time to time offers introductory experience of from one to three months basic training and recommends at least three additional months for practical experience before a staff member is considered to be fully trained.

Library of Congress Staff:

15 Librarians
7 Lab technicians
6 Nitrate workers
2 Reference librarians

This is not sufficient to keep abreast of the work to be done, particularly in the area of television tapes.

3. Building

The current building was completed in 1941. Its purpose was to house books, and their weight was to be supported by the central frame of the building. Its characteristics had to be accounted for in the design of the film section. The original shelves for books were arranged to accomodate the differing sizes of cans. The film index numbers state shelf location so, for example, the letters FAA designate the 400 foot reels, FBA the 800 foot reels, and FCA the 1200 foot reels. FBA continues on to FBB 1 through 9999 then FBC 1 through 9999, etc. Painted steel cans are used on hanging shelves. The floors are sheet metal over the building frame. There are no water sprinklers. A new building is currently under construction.

4. Inspection

One person checks the film before and after viewing. There are six inspection machines, three for 35mm and three for 16mm.

5. Summary

The Library of Congress Film Division is a typical research and reference collection. Access is primarily to scholars, and the collection itself is handled by very few highly trained specialists. It is similar to a closed stack book library. Use of computers is in a very early stage, and considerable doubt exists that the general library computer system is appropriate for the special needs of a film collection.

The Library of Congress belongs to FIAF (Federation International des Archives du Film) and has played an active role in the preservation of films as elements of the national cultural heritage.

Chapter IV

The ERIC Clearinghouse on Information Resources

ERIC -- Education Resources Information Center -- is located within the National Institute of Education (NIE) in Washington, D.C. Its purpose is to collect, process, and disseminate a wide range of documents on all areas of educational planning and research.

ERIC is a vast network of clearinghouses, publishing and reproduction services and a computerized processing facility. There are sixteen clearinghouses throughout the United States, each specializing in one particular educational area. These clearinghouses acquire, select, and process mainly unpublished relevant documents. For example, the ERIC Clearinghouse on Information Resources at Stanford University (ERIC at Stanford) specializes on how information technology (i.e., television, radio, computers, and films) can be adapted to education facilities. Documentation on the information utility of such systems as cable television and communication satellites also is processed through ERIC at Stanford.

There are three principal ERIC tools for locating documents. The first is Research in Education (RIE), which abstracts technical and research reports, speeches, conference papers, program descriptions, teacher guides, statistical compilations, and curriculum materials. RIE is a monthly publication, and annual indexes of RIE go back to 1967. Prices and ordering information are given in Appendix C (pp. IV-80-81). A second tool, Current Index to Journals in Education (CIJE), a companion to RIE, provides a monthly index by author and subject to the education literature of approximately 700 periodicals. The terms used to index the material found in RIE and CIJE are compiled in a third tool known as the Thesaurus of ERIC Descriptors. Information on ordering and prices of both the CIJE and the Thesaurus are listed in Appendix C (p. IV-82).

Obtaining a hard (photo) copy or a microfiche of the items reported in RIE is accomplished through the ERIC Document Reproduction Service (EDRS). The entire collection in microfiche of all reports abstracted in RIE since 1966 is obtainable for approximately $10,000. Users may retain

a standing order for microfiches of all current reports listed in RIE. Special collections not listed in RIE also are obtainable through EDRS. Information on obtaining copies of ERIC documents, both microfiches and hard copy, is given in Appendix C (pp. IV-83-85).

For the past two years, NIRT and ERIC at Stanford have had a working relationship, whereupon NIRT has been provided with some documentation on the capabilities of ERIC. In a letter to F. Alizadeh of NIRT (Appendix C, pp. IV-86-89), Maxine Sitts of ERIC at Stanford detailed a concise summary of some of the services they can provide to NIRT for implementing an ERIC system. Already many books and publications on instructional media have been sent to NIRT, and another collection is now being assembled. The staff of ERIC at Stanford have prepared and sent to NIRT an annotated bibliographic print-out of several hundred publications on instructional media. For NIRT to benefit directly from this documentation, ERIC at Stanford can provide instructions citing specific applications. A card catalog, cross-filed by author, title and general subject for all publications sent to NIRT, is being prepared and will be sent upon written request from NIRT.

Copies of relevant publications are being solicited and all of the publications collected will have special covers with the caption, "A Publication Selected by the ERIC Clearinghouse on Information Resources for National Iranian Radio and Television" (see Appendix C, pp. IV-90-91).

Another vital component of the ERIC network is the centralized ERIC Processing and Reference Facility. This is a computerized information processing unit maintained by Operations Research, Inc. (ORI)*. Its services include:

a) Document control -- screening, duplicate checking, assignment, storage and special distributions;

b) Document analysis -- cataloging, indexing, abstracting and editorial review;

c) authority list maintenance and data preparation.

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* Operations Research, Inc., 4833 Rugby Avenue, Suite 303, Bethesda, Maryland 20014.

The entire facility, its operations and framework, is described in the ERIC Processing Manual.* Copies of a modified version of the system components and a summary of the processing guidelines accompany this report.**

The facility provides access to data bases known as ERICTAPES. These data bases comprise the indexes of RIE and CIJE and are obtainable from ORI.*** Although these ERICTAPES are used primarily on the IBM 360 or 370, they are adaptable to smaller systems. The software used to create these data bases, however, is only usable on the IBM 360 or 370. Duplicate copies can be obtained from NIE, but it should be emphasized that their use may be difficult on non-IBM equipment.

NIRT could develop an information storage and retrieval system using a mini-computer. A complete ERIC processing system would be adaptable to such a unit. Implementing a mini-computer system could incorporate not only a batch and on-line capability, but could be designed specifically to NIRT's needs for developing their own input/output format. At present, the Stanford/NIRT Project team is evaluating those mini-computers capable of meeting NIRT's specifications. It is possible that the Tymshare system used by CBS could be adapted for ERIC materials. Mr. Jonathan Embry, coordinator for User Services at ORI, also could assist in the adaptation of a complete ERIC processing facility on a mini-computer.**** Appendix C (pp. IV-92-93) gives a composite of all the components required for ERIC at NIRT. The efforts of the ERIC at Stanford staff to implement these components for an ERIC system at NIRT combined with the services of ORI

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* ERIC Processing Manual, Rules and Guidelines for the Acquisition, Selection, and Technical Processing of Documents and Journal Articles by the various components of the ERIC Network (NIE), July 1974, available from ORI for $25.00.

** ERIC: System Components and Summary of Processing Guidelines. Issued by ERIC Clearinghouse on Information Resources, Stanford University.

*** The costs of duplicate copies of ERICTAPES is approximately $600.00.

**** See also Embry, Jonathan, et al., Survey of ERIC Data Base Services, Educational Resources Information Center, ED 094 750. Washington: National Institute of Education, 1974.

and the evaluations of the Stanford/NIRT Project Team for developing a flexible information retrieval system provide a unique opportunity for NIRT to have a highly effective educational resource service for Iran.

The major unresolved question for such an implementation concerns the kind of computer support system to be provided. The basic choice is between shared use of a large computer system and dedicated use of a mini-computer-based system. If a large computer other than IBM or Amdahl (which can use IBM software) is chosen, then a major computer software development effort will be required. Choosing to share a large machine (e.g., with other NIRT computer applications) is likely to delay the implementation because of long delivery schedules, the complexity of implementation of hardware, system software, time-sharing software, and coordination of applications software development with other applications using the same computer hardware.

We, therefore, recommend a stand-alone dedicated mini-computer system with associated random access microfiche access capability. Preferably, the same system selected for NIRT's own archive capability would be used for the NIRT ERIC system. We have asked Tymshare Corporation and their exclusive Iranian agent, Mimax Corporation, to prepare a technical system proposal and budgetary estimate for NIRT review. They understand the necessity of a fully supported and back-up system, requiring back-up support from Mimax and, if necessary, by computer networking through Tymnet to Tymshare computer software staff in California. We recommend that NIRT ask their Tehran engineering consultants, Quality Control Engineering, to review the Tymshare-Mimax proposal when it is completed, compare it with information to be obtained on any system NHK (Japan) or RAI (Italy) may have and make their recommendations. If the Quality Control Engineering review is favorable, then an appropriate system implementation contract between NIRT and Mimax should be entered into. The Stanford/NIRT Project Team will be pleased to prepare staffing plans (including staff training) and to assist in the procurement of ERIC materials in conjunction with such development. If the Tymshare proposal is not satisfactory to NIRT, the Stanford/NIRT Project Team will continue to explore alternatives.

Meanwhile, we recommend that NIRT proceed immediately with recommendations 1, 3, and 4 of Maxine Sitts' letter of January 30, 1975 (Appendix C, pp. IV-86-89) to F. Alizadeh of NIRT. We also recommend that the ERIC microfiche collection eventually be procured, as per recommendation 2 of Ms. Sitts' letter, but that implementation be delayed until it is determined whether the Tymshare system (or some other) can be supplied to satisfactorily combine computer indexing and microfiche retrieval. Unless there are urgent needs requiring immediate procurement, perhaps recommendation 5 can be deferred until NIRT procures the entire ERIC microfiche collection. If you wish specialized bibliographies (Recommendation 6), then we recommend to you the service of the Stanford ERIC Clearinghouse. We have been favorably impressed with their previous work on providing ERIC services.

Chapter V

SPIRES File of Instructional Video Materials

The Stanford Project Team has been exploring the availability of instructional video materials that might be of interest to NIRT.

A number of current catalogs and catalog schema from university, government, and commercial sources have been investigated. The University of Wisconsin, for instance, has an index to college television courseware which includes multi-segment video tapes suitable for entire course programs. The Network for Continuing Medical Education produces a listing of videotapes related to health care. Associated Western Universities, Inc. has listings in the engineering/science fields. The two richest sources have been VIDEOPLAY, a source guide compiled in 1974 which is in essence a catalog of catalogs, and the volumes cataloged by the National Information Center for Educational Materials at the University of Southern California. The latter is a listing of all non-book media, compiled over the last nine years, and continually updated. The listings contain titles of close to 20,000 videotapes and 100,000 films as well as records, tapes, and filmstrips.

As part of this task, Stanford is creating a computer-based catalog of film and video educational materials on the SPIRES system. The file will consist in part of individual entries of audio-visual aids for higher education (entire courses representing signle entries). The indices and cross-indices of this material have been defined with a user orientation. The file will list and permit search on such elements as title, subject, source (institu-.tional, country), language, date, conditions of use (sale/rental), and format (length, size specifications, dubbing possibilities). Some entries will be cross references to catalogs and files of information available elsewhere and not duplicated in the Stanford file.

Along with the work of file definition, materials have been gathered for inclusion into the file. Catalogs of films and video tapes from around the country are being reviewed as are currently existing computer-based files. The SPIRES file, which will permit continual updating, should, of course be comprehensive without duplicating existing references. Once the NIRT computer and archive decisions are made, we can consider transferring this file in machine readable form to Iran. In the interim, hard copy outputs from the file can be made available.

Appendix A

Tymshare

I. INTRODUCTION

In response to your request for a proposal for a system for the National Iranian Radio and Television System film library, I have included a description of the two presently available systems.

The first system is the Tymshare Inventory and Retrieval System for Film Libraries. First, this system provides automatic method of cataloging film by subjects, names, dates and locations. Second, the system provides a searching program to easily find film or video tape through the use of these parameters. Lastly, the system allows the librarian to keep an inventory of what film is on the shelf, which items have been borrowed, by whom and when the items are expected to be returned.

The second system is a transcript storage and retrieval system that allows transcripts to be stored on microfilm with the indexes stored on magnetic disk. It allows the automatic retrieval of the transcripts by any combination of subjects, dates, names of people, or locations. The keyword entry programs are tailored to the entry of transcript and affect increased speed and accuracy of data entry through these formats.

II. TIME SCALES

Both systems are presently available for installation operating in the English language. The Farsi language will require about 9 months after the receipt of the contract.

III. EQUIPMENT

The system will be composed of a Microtym Control Unit II controller handling up to 16 microfilm work stations and up to 30 CRT stations. The exact configuration of equipment will be determined by the requirements of the user.

INVENTORY AND RETRIEVAL SYSTEM FOR FILM AND VIDEO TAPE

I. INTRODUCTION

This system is designed to automate the process of cataloging and retrieval of film in addition to inventory control of the film in the library. The use of the term film in this document refers both to film and to video tape.

This system is divided into two sections: The first section is used to find film by subjects, locations, dates, people involved or other types of keywords from the film stored in a film library. The second section of the program is an inventory control program that keeps track of the individual pieces of film by access number, footage and who has checked them out.

Additional programs generate reports of film that is present in the library, and checked out of the library.

In the following document examples of how the computer terminal is used are present for clarification of the text. In these examples lower case characters are used for the information that has been typed by the user and UPPER CASE is used for the information that is typed by the computer. The symbol ↵ means carriage return.

II. FILM ENTRY

Let us now trace a piece of film through the system. The film arrives at the film library or archives and it is handed to the film librarian. The command ENTER is typed by the librarian.

```
-enter
ACCESS NUMBER IS: 12355↵
TITLE: salt talks↵
DATE = 750809↵
SUBJECTS: salt, summit, airforceone↵
↵
NAMES: brezhnevl, fordj.kissingerh↵
  gromykoa↵
↵
LOCATIONS: bucharest↵
↵
LENGTH: 500↵
COMMENT: film color is poor↵
↵
ARE ALL ITEMS CORRECT (Y OR N): y↵
DONE**
```

First the system requests the ACCESS NUMBER. This number will then be the means of identifying that film. This number may correspond to film can number and shelf number and film number, or it may be an assignment number or have any other designation you wish to use, but from it you must be able to locate the film if it is on your shelf.

The date is asked for next and then all the SUBJECTS, NAMES or LOCATIONS that you wish to enter may be entered. There is no limit to the number of these items that can be entered and a blank line indicates the end of each item.

The film length must be measured and entered by the library personnel - a zero will not be allowed.

At the end, it will ask if all items are correct. If they are not, a change program will be called, when the user types N↵ If a Y↵ is typed, the word DONE is printed.

III. CHANGING THE RECORD OF A FILM

If after the information regarding a piece of film is entered, a change is required, the CHANGE program is called.

```
-change  12355↵
FIELD loc↵
LIST ITEMS TO BE DELETED: bucharest↵
LIST NEW ITEMS: helsinki↵
FIELD↵
DONE**
-
```

In this example the first three characters of the field name are entered and the items to be deleted from this field are entered. The items to be added to the field are next entered. This process is continued until all changes are made.

If the field is only a single entry field such as the date, the first question will be skipped.

IV. FINDING A DESIRED PIECE OF FILM

To find a piece of film in the library, call the SEARCH program.

```
-search↵
S: salt and n = fordj and n=brezhnevl and d > 750701 (SC)
   5 hits
S: (SC)
```

Descriptions of the 5 pieces of film on the SALT talks that were taken after July 1, 1975 that included President Ford and Leonid I. Brezhnev are now printed.

NUMBER 12357 DATE 750809
SUBJECTS SALT SUMMIT AIRFORCE ONE
NAMES: BREZHNEVL FORDJ KISSINGERH
LOCATION BUCHAREST
LENGTH 50
COMMENT COLOR IS POOR

Four more entries like this one are printed.

This example of the SEARCH portion demonstrates only a few things that can be done with the system. This portion of the system is one of the most powerful since it can locate the film that contains the subjects, names,locations and dates you want. Examples of other searches:

S: (fuel or oil) and (egypt or iran)(S^C)
S: (reactors or nuclear or U235) and natural(S^C)
S: tornadoes and midwest not d=750403

This last search would find film on tornadoes in the midwest, but not the April 3rd occurrences.

V. CHECKING OUT THE FILM

When a person within the business wishes to borrow a piece of film or video tape from the library, the librarian uses the TRANSFER program to record the event.

- transfer 12355↵
TITLE: SALT TALKS title prints out
FROM: library↵
TO: jones, news room↵
DATE TO BE RETURNED: 750815↵
FOOTAGE 500↵
OK TO PROCESS (Y OR N) y↵
DONE

VI. RETURNING FILM TO THE LIBRARY

When the user returns film to the library the TRANSFER program is used in the opposite direction,

- transfer 12355↵
TITLE SALT TALKS
FROM: jones, news room↵
TO: library↵
FOOTAGE: 400↵
LAST RECORDED FOOTAGE WAS 500 IS THERE A
PROBLEM (Y OR N) n↵
OK TO PROCESS (Y OR N) y↵
DONE

and the film is returned to the library.

VII. OTHER PROGRAMS

For record keeping and inventory control the following programs are available:

SHELF-REPORT - Prints the following information about each piece of film in the system.

1. Access Number
2. Story Title
3. Footage
4. Stock
5. Current Holder
6. Date and Time Expected

OUT-REPORT - Prints the same information as SHELF-REPORT for all pieces of film that have been borrowed from the library.

UNIT-REPORT - This prints out the same items as SHELF-REPORT for those pieces of film borrowed by one specific person or group.

DELETE 12355 - If a film has been destroyed or it is no longer of use in the library, the DELETE program can be used to do the removal of the record of that piece of film from the system.

TRACE 12355 - This program prints a record of each person or group that has borrowed the film the date and time borrowed and the footage when the film was returned.

MICROS SYSTEM

A System for the Retrieval of Transcripts and Documents
Stored on Microfilm

1. GENERAL

The MICROS software package on the Microtym Control Unit II (MCU-II) is an information management system which integrates microfilm, computer, and data communication technologies. Its design is based upon the need to:

a. maintain a body of information which is either too large to store on a computer economically, or is in a form unsuited for computer storage (graphics, fingerprints, drawings), or both; and

b. retrieve useful information on demand from that body under either time constraints infeasible for manual methods, or complexity requirements too demanding for mechanical methods, or both; and

c. provide full on-line service, including hard-copy capability, to a number of workstations, either local or remote.

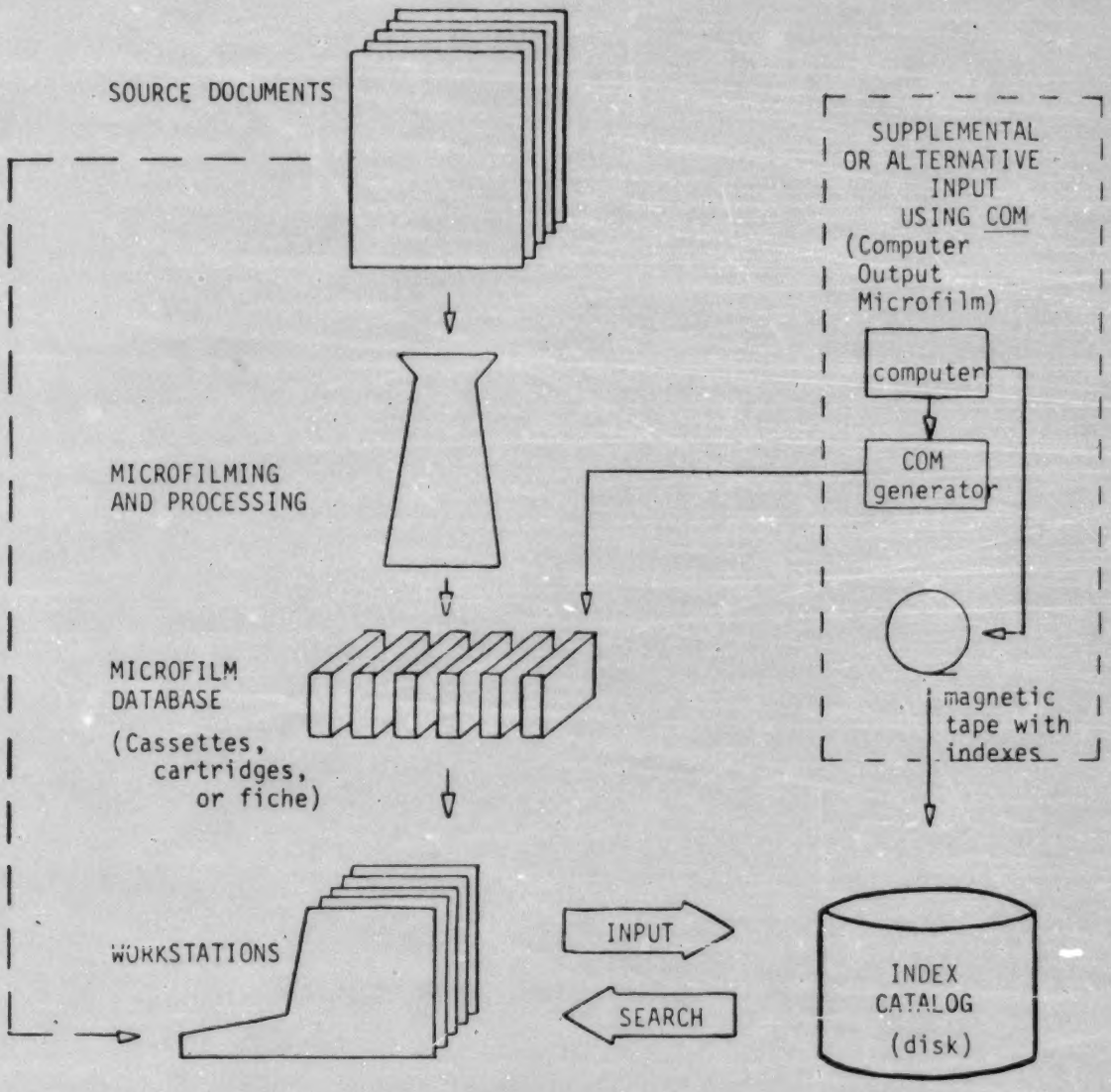
The MICROS user takes advantage of the economies, convenience, and security of microfilm by maintaining the principal database on microform media: roll film cassettes or cartridges, or microfiche. MICROS then maintains a cross-indexed catalog of selected locator terms, called "keywords", on MCU-II disk storage.

* MICROS builds and updates the catalog with user-supplied associations between keywords and film-image identification numbers, provided by the workstations.

* MICROS researches the cross-indexed catalog at on-line computer speed and automatically displays the resultant film image or images at the requesting operator's workstation.

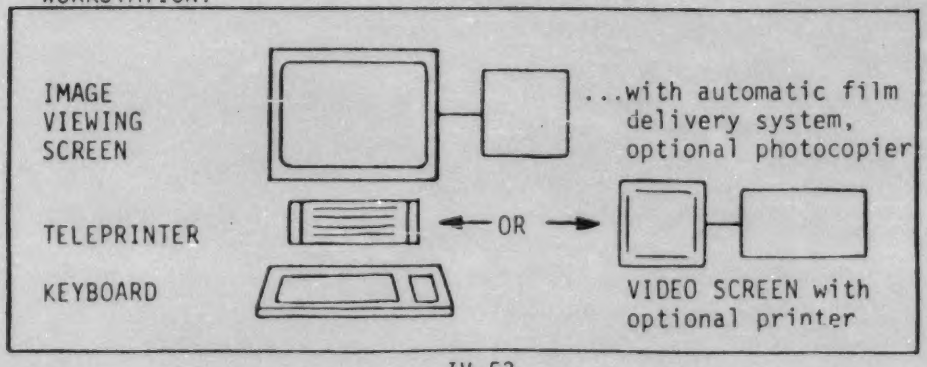
MICROS information-management power is extended by linking disk-stored text with both film images and catalog entries. Text linked with a film image will display automatically on a video screen or hard-copy printer at a workstation whenever the film image is displayed at that workstation; anything from a short code word to a 32,000 character document can be used to update or supplement the information on film. Similarly, text messages can be used to annotate keywords for cross-indexed ("SEE ALSO...") retrieval.

SUMMARY OF MICROS INFORMATION FLOW



INPUT: operators enter keywords from filmed or paper documents
SEARCH: operators enter search criteria, film displays automatically

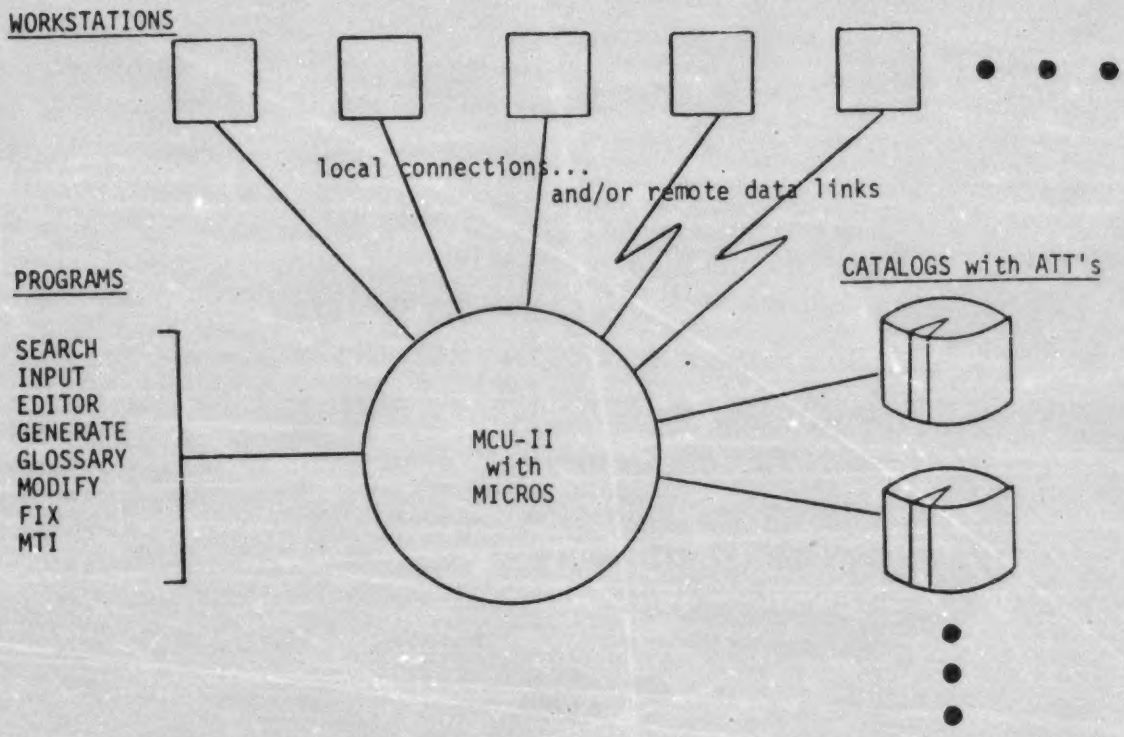
WORKSTATION:



IV-53

MICROS design recognizes the similarity of information-processing needs in many different user applications, and employs certain standard design choices for all: for example, disk storage techniques trade off batch-mode updating speed in favor of on-line retrieval speed. To accomodate a wide diversity of user applications, MICROS employs ATT's -- Application Tailoring Tables -- which structure the system to fit the information processing and operator training requirements of each application; the ATT's allow the user to operate his system with the procedures and terminology that are familiar to him. ATT-tailored MICROS applications include:

* corporate, agency, and institutional correspondence files
* personnel records and skills inventories
* research documents and engineering drawings
* broadcast journalism transcripts and archives
* police identification records
* hospital patient archives
* technical reference libraries
* property maps and architectural plans



- MULTIPLE WORKSTATIONS: up to 15, local and/or remote, on line simultaneously.
- MULTIPLE APPLICATIONS: up to 10, each with its own catalog and ATT, simultaneously available to any workstation or combination of workstations.
- MULTIPLE FUNCTIONS: any workstation or combination of workstations can simultaneously perform any function on any application.

II. CATALOG ORGANIZATION

KEYWORD: an indexing word, phrase, code word, or number which is extracted from or applied to one or more microfilmed documents as a descriptor. Documents are then located by their keywords. Keywords can be up to 45 characters long.

LIST: a category for organizing and separating keywords. Lists are established in the ATT of each application to provide naturalness and certainty in information management, as well as processing efficiency. For example, a personnel records application might include list categories of employee name, date of hire, salary, etc. Note, for example, that list separation is necessary to distinguish the keyword "1950" as a year of birth from the keyword "1950" as a monthly salary.

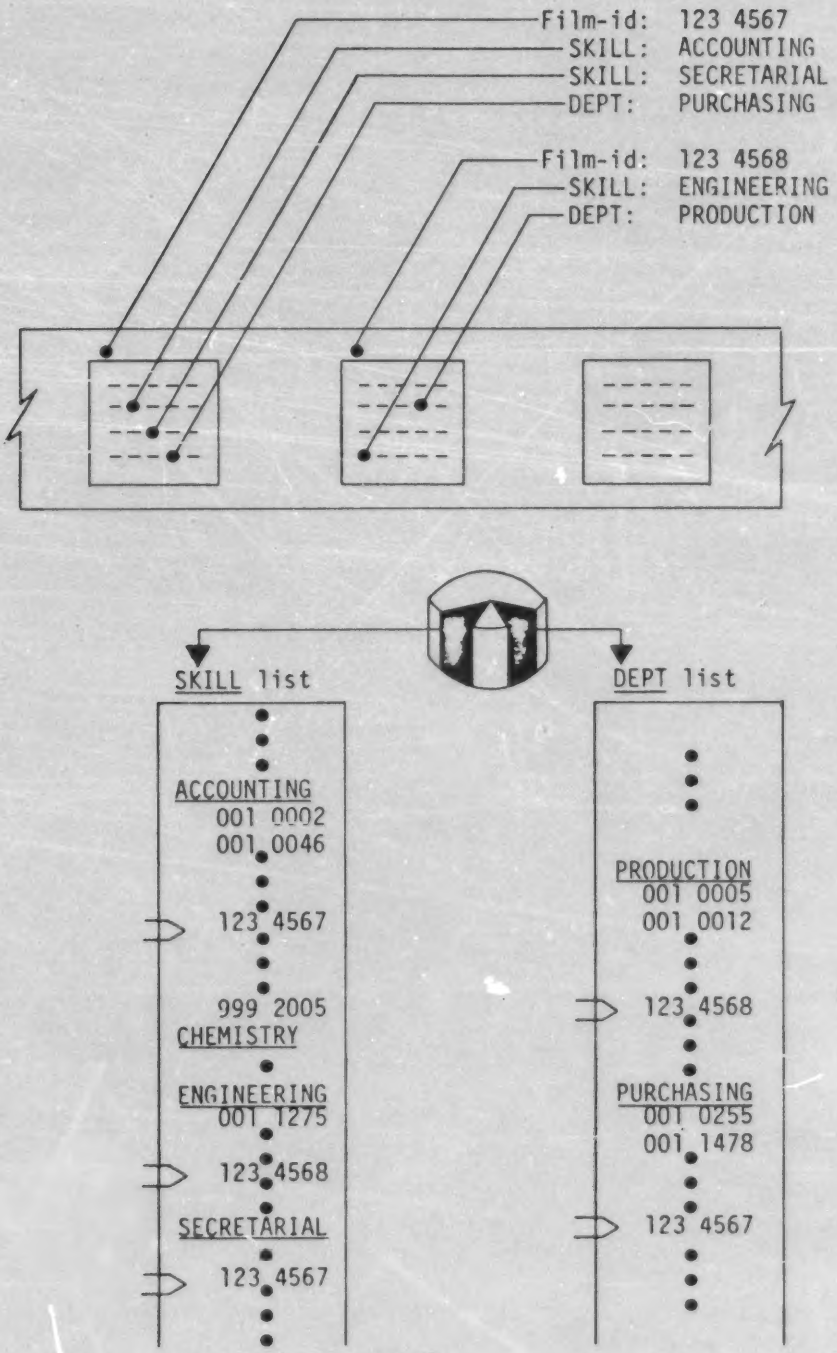
CATALOG: an area within MCU II disk storage containing all the keywords, with their associated film identifier numbers, that index one user application. (Text files and the ATT for an application are also stored on disk.)

* To save disk space, keywords themselves are stored only once, each followed by a table of associated film references.

* MICROS can access any keyword by direct-access lookup for immediate retrieval (1 to 3 seconds).

* Since all keyword entries in a catalog are organized in sorted (alphabetical) order within list category, MICROS can perform searches on such criteria as "names between Roberts and Smith", "part numbers beginning with XX1", "salaries above 15000", etc.

CATALOG ORGANIZATION
(EXAMPLE: PERSONNEL RECORDS)



III. SEARCH

SEARCH is the information-retrieval program in MICROS. It operates on a simple two-step basis.

1. The operator types in a request (the "search string") which specifies the desired information. MICROS searches the catalog according to the criteria in the search string and creates a table of "hits", which are the identifying numbers of film images that fit the stated criteria.

2. The operator uses single keystrokes to automatically deliver the hit-images, one at a time, to the film-viewing screen of his workstation.

The search string can be as simple or complex as desired. The simplest search string -- a single keyword, such as SMITH.JOHN — will result in a direct lookup, with the hit-table available in under three seconds.

When a hit-table is available, the operator can issue simple keyboard commands to:

* view the next hit (one keystroke);

* skip forward or backward in the hit-table by any number of hits;

* browse forward or backward any distance on the film without losing his place in the hit-table.

At any time, the operator can modify the result of the previous search by typing in a "continuation" search string. When a search results in too many hits to view conveniently, further criteria can be added in this way to narrow the selection without reentering a complete new search string: this technique is often useful in "homing in" on documents whose exact descriptions may not be known. The intermediate results can be saved on the disk for future recall, if desired.

SINGLE KEYWORD SPECIFICATIONS

The simplest search strings involve only one list and one "keyword specification", which selects a possible single keyword or a possible set of adjacent keywords from a list. There are five "list relations" available, with two variants. The following examples also introduce the "default list", ATT - selected as the one most frequently used in the application; an operator can locally override this selection whenever he decides to give more attention to another list.

o EXACT	list-name = keyword specification
NAME = SMITH.JOHN	...selects and locates all documents indexed with the name "SMITH.JOHN".
= SMITH.JOHN	...is sufficient, if the default list is NAME.
SMITH.JOHN	...is sufficient, if the default list is NAME and the default list-relation is "=".
o RANGE	list-name / kws1, kws2
PARTNO / AB300,AB377	...selects and locates all documents indexed with any part-number between AB300 and AB377, inclusive.
/ AB300,AB377	...is sufficient, if the default list is PARTNO.
VENDOR / J,L	...selects and locates all documents indexed with any vendor-name in the alphabetical range of J to L; i.e., any vendor-name beginning with "J", any vendor-name beginning with "K", and (if present) the vendor-name "L".

o ABBREVIATION list-name : keyword specification

NAME : ROBERT ...selects and locates all documents indexed with the name ROBERT, or with any name beginning with those characters (ROBERTETTE, ROBERTS, ROBERTSON, et

: ROBERT ...is sufficient, if the default list is NAME.

This feature can be especially useful when the operator is not sure of exact spelling.

o GREATER-THAN list-name > keyword specification

o LESS-THAN list-name < keyword specification

SALARY > '2500

DATE < 740101 (January 1, 1974)

These relations are not restricted to lists containing numeric keywords.

o UNIVERSAL CHARACTER (#)

The "universal character", "#", can be used in the keyword specification of an exact (=) or abbreviation (:) search to mean that any character in its position is accepted as a match.

NAME = ANDERS#N ... selects and locates all documents indexed with the names ANDERSEN or ANDERSON, but not (if it exists) the name ANDERSN.

DATE = ####15 ...selects and locates all documents indexed with a date (in YYMMDD format) which is the 15th day of any month in any year.

LOGICAL COMBINATIONS

The real power of SEARCH is in retrieving information using logical combinations of search criteria. Any of the previous types of searches can be combined using the three "logical operators":

AND	...to match
OR	...to merge
NOT	...to exclude

While the words AND, OR, and NOT are chosen for naturalness, they are used with more precise meaning than is common in everyday speech. Their use in SEARCH is easily learned.

DEGREE=MBA AND LANGUAGE=FRENCH

...selects and locates only those documents indexed with both an MBA degree and French language skill. Documents indexed with one of the specified keywords, but not the other, will not be selected.

PARTNO:A#3 AND VENDOR/JA,LZ

...selects and locates only those documents indexed with both:

1. a part-number whose first character is "A", third character is "3", and which is at least three characters long;

and

2. a vendor-name in the alphabetical range JA through LZ.

ACETYLENE AND PROPANE

...selects and locates only those documents indexed with both these keywords in the default list.

JOB=SECRETARY OR JOB=RECEPTIONIST

...selects and locates those documents indexed with either a "SECRETARY" job classification, or a "RECEPTIONIST" job classification, or both.

Note that this search would be proper for a user whose verbal request was "find all personnel records on secretaries and receptionists"; the use of the word "and" in this case really means "merged together with" (logical OR), whereas the logical AND means "both criteria on each target document".

ACETYLENE OR PROPANE

...selects and locates those documents indexed with either (or both) of these keywords, in the default list.

LANGUAGE=FRENCH NOT DEPT=INTERNATIONAL

...selects and locates those documents indexed with French language skill but not with the International department.

Note that (a) the NOT operator means AND-NOT in formal logic terms; and (b) while the other two operators are left-right symmetrical, the meaning of NOT definitely depends on left-right order.

ACETYLENE NOT PROPANE

...selects and locates those documents indexed with the keyword "ACETYLENE", excluding from these any which are also indexed with the keyword "PROPANE" (in the default list).

ADVANCED TECHNIQUES

Search criteria of any desired complexity can be specified using two features:

* First, any number of terms, separated by logical operators, can be included: the search string is evaluated from left to right.

  JOB=SECRETARY OR JOB=RECEPTIONIST AND LANGUAGE=FRENCH

  (The left-to-right rule means that this example refers to French-speaking employees who are either secretaries or receptionists, not to secretaries plus French-speaking receptionists.)

* Second, parentheses can be used to combine items into a single group that can be acted upon by a logical operator.

  (DEGREE=##EE OR DEGREE=LLD OR DEGREE=MD) AND
  (SALARY > 25000 OR DHIRED < 690101)

  ...refers to electrical engineers, lawyers, or doctors (or multi-educated people within these areas) who have a salary greater than $25,000 or who have been hired prior to 1969 (or both).

IV. DATA ENTRY AND MANIPULATION

Information is stored into MICROS catalogs by a three-step process:

1. Initial data entry into holding files, with simultaneous data validation. Data can be entered either by reading a magnetic tape from another computer, using the Magnetic Tape Input (MTI) program, or by on-line source data entry and validation at the workstations, using the INPUT program.

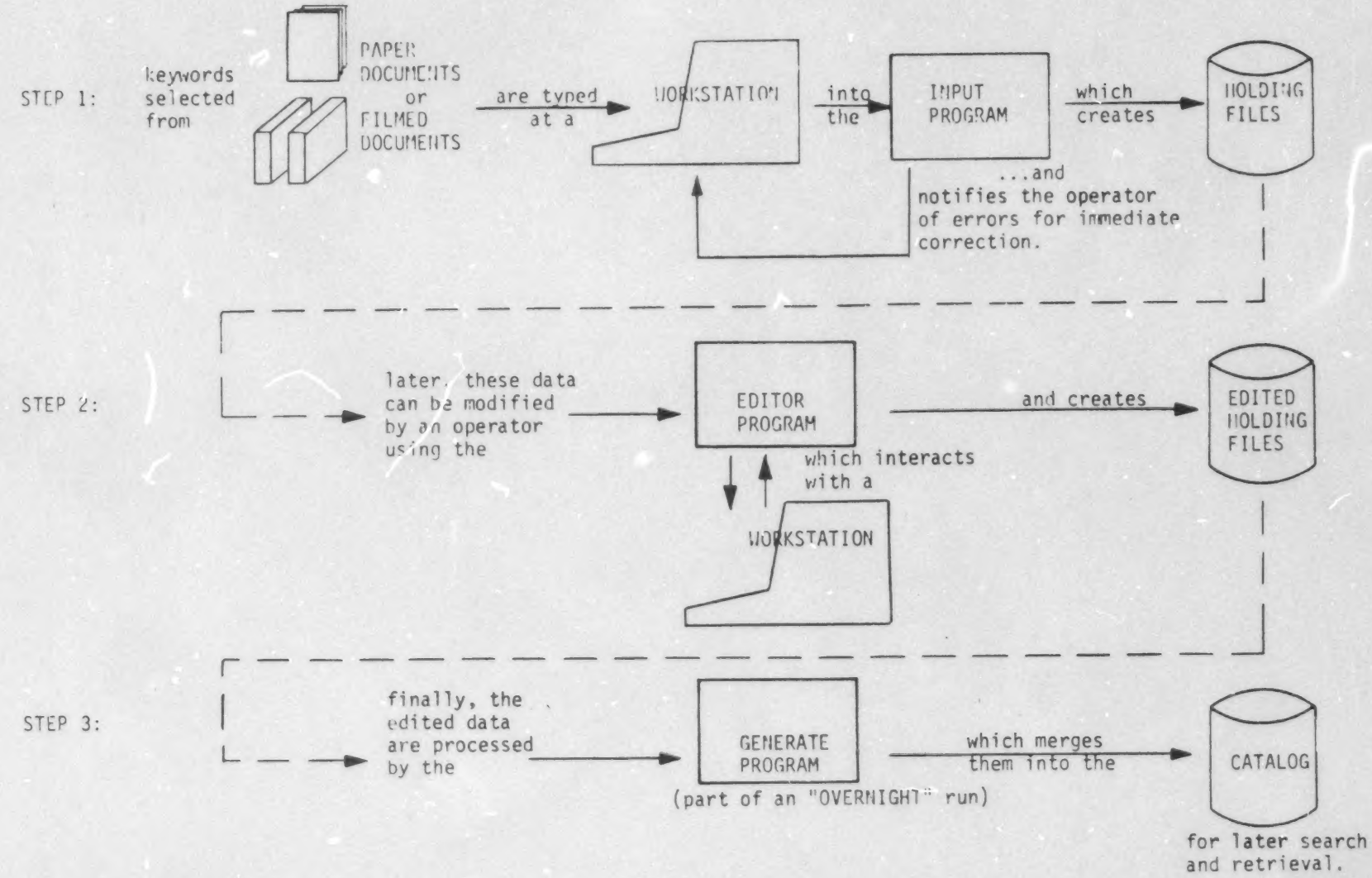
2. On-line editing of the holding files. Supervisory operators can use the on-line EDITOR program to check and modify the data entered in the previous step. Many MICROS applications bypass this step by using indexing procedures in which original validation is sufficient.

3. Posting into the catalog. The final holding files are merged into the catalog by the GENERATE program. Although catalogs are protected against simultaneous access errors (i.e., SEARCH can run concurrently), GENERATE is typically run as part of a larger program called OVERNIGHT, which runs unattended and included MCU-II system backup and other "housekeeping" steps.

Since many MICROS applications assign the bulk of operator time to data entry, the ATT's heavily tailor the INPUT program to guide and assist operators in indexing, using procedures which fit the application. Data entry can be done (a) before filming (with paper documents numbered to correspond to image numbers in the forthcoming microfilm cassette or cartridge), or (b) during filming (using an integrated data entry/filming workstation), or (c) after filming. In either case, keywords may have been marked on the source documents before filming, or may be selected by a trained operator while scanning the image (or paper document).

The INPUT program asks the operator to supply a "target" number to identify each document for later retrieval; if indexing is from film, the operator positions the viewer at the desired image and then strikes one key to identify the target. MICROS then handles all necessary film movement while interactively prompting the operator to enter keywords for each list. Any typing errors detected by the operator or by the ATT validation procedures can be corrected on the spot.

DATA ENTRY IN A TYPICAL MICROS APPLICATION



Finally, MICROS provides three facilities for examining and editing the catalog itself.

* GLOSSARY creates a printed index from the catalog, for both editing and back-up purposes. Partial listings (for a specified range of keywords in a list) are available, as are other options for printing. Output can go directly to the optional MCU-II line-printer, or to magnetic tape for later use.

* FIX is an on-line program for interactive corrections to one keyword at a time.

* MODIFY handles modifications which require access to the entire catalog; this program runs unattended. It includes "aging" functions, such as the ability to purge all references to a given (obsolete) film cassette or cartridge.

V. Examples of Transcript Searches

To find a news story on the development of Kalimantan, Indonesia, the user would type:

S: indonesia and kalimanta S^C
10HITS
S: and date/750101,750701 S^C
8HITS

The user then limited the search to the first six months of the year, and the number of transcripts selected was reduced to eight. To now reduce the transcripts to those that concern only Prof. Ali Wardhann or Prof. Tojib Hadiwidjaja, the user types:

S: and (wardhanaa or hadiwidjajat)S^C
4HITS

Pressing the search key again will automatically display these transcripts.

Appendix B
An Annotated Bibliography

The literature on film and tape storage and retrieval is not particularly rich, and tends toward the ideosyncratic. The two richest volumes are Helen Harrison, Film Library Techniques, which is the best source of general administrative and conceptual material for a working television and film library, and Ralph Sargent, Preserving the Moving Image, which presents a comprehensive survey of scholarly film archives together with recommendations for optimal storage conditions. Sargent tends to be rather idealistic in his recommendations and does not take costs into account, and his frame of reference is that of the long-term national historical archive. Harrison does not recognize the value and possibilities of computer search systems, although her book antedates many of the recent developments in the field.

What follows is a bibliography of the most useful and most contemporary books, articles, and reports available in English. Most of the memoranda and reports are available on request from the Stanford NIRT project office.

ANNOTATED BIBLIOGRAPHY

Abbott, John E., "Cataloging and Filing of Motion Picture Films", Library Journal, 63:3, February 1938, pp. 94-95.
Describes cataloging, administration and permanent preservation of an archive film collection at the Museum of Modern Art Film Library. Gives treatments and techniques for the preservation of old films. Good detail on how films from different countries are classified.

Aveney, Harriet W., Bibliography on the Cataloging of Motion Pictures, Working Memorandum, Library of Congress, 11 pages.
Gives a list of forty-two current references compiled by Mrs. Aveney who also worked on the FIAF committee on cataloging.

Battersby, Mark, Film Handling and Storage Building, Inter-office Communication, Internal Memorandum, MGM, November 17, 1970, 11 pages.
Copy of a memo written to Roger Mayer, General Manager of the Film Services Division of MGM when planning to modify their film handling and storage facilities. Interesting exposition on how a large commercial company assesses the need to streamline and improve its services. Provides realistic facts and figures about storage requirements (film load per square foot). Shows how labor and union requirements affect the decision-making process. A straight-forward business document with the theoretical leanings of the other references.

Blair, Patricia O., "Treatment, Storage, and Handling of Motion Picture Film", Library Journal, 71, March 1, 1946, pp. 333-336.
Superficial discussion on cataloging and care of footage; few facts.

Bradley, John G., "Film Vaults: Construction and Use", Journal of Society of Motion Picture Editors (JSMPE), 53:2, August 2, 1949, pp. 193-206.
Discusses the dangers and special needs in storing nitrate based films. Films of primary, secondary and tertiary value are distinguished as units of risk requiring separate storage facilities. Compares open rack versus storage in separate compartments in cabi-

nets. Secondary and primary values are found in the National Archives. A diagram demonstrates how water supply, baffle, and fire trap work together for protection. A retractor belt functions as a retractor device, and as an insulating device against heat. Insulated and uninsulated cabinets exist for primary risk of film. Describes the basic principle of the water sealed cabinet. Gives building instructions and dimensions. Emphasis placed on adequate air ventilation and air conditioning.

Bradley, John G., "A National Film Library - The Problem of Selection", JSMPE, 47, July 1, 1946, pp. 63-72.

Discusses the basis for selection and choices open to archivists. Argues for discretion in what is preserved, given the bulkiness of motion pictures as compared to books. The decision-making process has strong implications on the services of the collection. Volume depends on available funds. Shows filmstrip as a concise sequential assembly of still pictures from the original release. Suggests compiling a catalog from the selected print materials related to film which would be beneficial to producers and students. Outlines the various groups who might give suggestions for films to be preserved.

Bradley, John G., "Wartime Cataloging of Motion Picture Film", JSMPE, 42:3, March 1944, pp. 145-155.

Reference summaries, subject index cards, reference film strips are described in detail with examples of the first two. Time and labor are important factors which can be applied generally.

Bradley, John G., "L. C. Plans its Film Program", Library Journal, 71:22, November 1946, pp. 1592-1597, 1615.

A statement by the newly appointed director of the film library of the Library of Congress. Broadly outlines the library's scope and pledge to fill national and individual needs for motion pictures. General information on its services as a clearinghouse of film information.

Bradley, John G., "Specifications on Motion Picture Film for Permanent Records", JSMPE, 48:2, February 1947, pp. 169-170.

Considers the volume of film in relation to storage space -- an estimated 4,000 to 5,000 vaults of government material for the first few years. Coordinating recommendations of other agencies regarding size of vents in ratio to film storage load. Dispersal of archival storage for posterity is a consideration in a nuclear age. Temperatures of 50°F and humidity levels of 50% are maintained. Prices of cabinets vary: stainless steel approximately $30 per reel compared to the paintable Cascade cabinets at $2 per reel.

Card, James, "Film Archives," Image, 7:6, June 1969, pp. 137-141.

Recounts briefly the history of the film archives, beginning with the British Film Institute, Cinematheque Francaise to the founding of the International Federation of Film Archives. An apology for the film archive as opposed to a museum.

Chibnall, Bernard, "Shell Film Unit Stock Shot Library", Association of Special Libraries and Information Bureau Proceedings, (ASLIB Proceedings), 4:2, May 1952, pp. 59-68.

Outlines the negative to positive procedure of film making. Suggests the director of the film as most qualified to sort it, in collaboration with the librarian. Gives criteria for selection. Describes how positive is stored in rolls, negative in individual shots. Sound storage is separate, being possibly even more useful than pictures. Includes photos of an editola and a moviola and sample catalog slip (simple), used with an attached sample frame. Description and classification of the shot poses problems, the UDC system being inadequate for sound effects. Chibnall emphasizes importance of visual memory in a film librarian but not in place of good records. A librarian and two assistants look after two hundred and fifty thousand feet.

Chibnall, Bernard, "The British National Film Catalog and its Contribution to Information Work", ASLIB Proceedings, 11:5, April 1963, pp. 141-145.

Members of the Council of Europe were asked in 1961 to prepare catalog of their own nonfiction film production. Several organizations, among them Aslib, British Association of Advancement of Science, cooperated.

Collinson, R. L., "Libraries for Television", Library World, 67:781, July 1965, pp. 3-7.

Demonstrates the scope and variety of BBC services without going beyond mentioning the Dewey double system used for cataloging eighty-five percent of its television output. Extensive sound libraries complement the picture libraries. Research for programs may call for one picture from approximately one hundred thousand in the Pictorial Publicity Library. One and a half million feet of 16mm and 35mm is added monthly on a short-term basis to a current library. Film worthy of retention is transferred to the Permanent Library. Film qualifying for archival storage is made available for deposit at the National Film Archive. There is a Television Gramophone Library with 23,000 records, which contain microfilm catalogs of the main sound archives and commercial libraries. The Television Music Library stocks 35,000 scores, plus sheet music and has a studio service for orchestras. The Reference Library provides background research, books, maps, periodicals, and technical works for TV engineers.

Committee on Preservation of Film, Report of, JSMPE, 35, December 1935, pp. 584 - 606.

Specific information on tests carried out on two types of storage cabinets: the "cascade" and the "Puddle." Discusses fire and air ventilation and extent of fire spreading from one can to another. Gives equipment and room conditions for the handling and winding of film. Concludes with a discussion of printers for old and shrunken film. Good diagrams and photographs are useful, bibliography.

Crowther, G., "The Cataloguing and Classification of Cine Film at the Royal Aircraft Establishment", ASLIB Proceedings, 11:7, July 1959, pp. 179-187.

Discusses particular problems faced when much of the material is similar in type. Provides an example of a Cine Film Information Sheet, a section of a typical shot list with edge numbers and descriptions and a typical stock shot entry. Use made of the Universal Decimal Classification. Catalog cards use a system similar to that visualized by the Anglo-American Cataloging Code. Gives an example of a typical main entry.

Eastman Kodak, Storage and Care of Kodak Color Films

This pamphlet stresses the importance of correct storage conditions for color film. High temperatures and humidity affect the three color emulsion layer at different degrees. The processing of color film also affected. Here, errors become apparent only through passage of time. Recommendations of the Kodak company outlined.

Eastman Kodak, "Storage and Care of Eastman and Kodak Motion Picture Films", Kodak Data Book, in Basic Production Techniques for Motion Pictures, 18 pages.

Specific "how-to" information and very useful. Relative humidity determines the moisture content of films, not the absolute humidity. Discusses raw stock, processed color and black and white. Processed black and white should be stored at approximately 70°F with relative humidity between 75 and 90%. Outlines four suggestions for the storage of archival color film. Mentions cans, storage cabinets and their conditions, and deals finally with the care of processed films. Gives manufacturers of such equipment as is discussed.

Effinger, Carl M., "The Filing and Cataloging of Motion Picture Film", JSMPE, 46:2, February 1946, pp. 103-110.

The system in use in the Film Library of Twentieth Century Fox is detailed stage by stage from the making of synopses of usable scenes from major productions to single catagories for filing. Several staff members work together to balance opinions. Specific details of the significant categories are given with a sample page. Catalogs with duplicates stored in safes.

Fanning, David D., "The National Film Archive", Library Association Record, 64, 1962.

The British Film Institute collected through purchase or donation 19,000 films since 1933. Selection is by three committees meeting once a month. Staff: Curator, Deputy Curator; Chief Cataloger and two assistant catalogers (responsible for the book library, stills, and information research); Acquisitions Officers, and separately, Television Acquisitions Officer; the Films Preservations Officer responsible for technical side is in a distinct location outside London at the storage vaults; a Productions Librarian, a liaison with the industry. Describes an outline of the procedure for the accessions register, seven in all with copies to different departments. Uses "Kalamazoo" system (British equipment); classification by UDC; publishes a catalog of film in archive; member FIAF. Denmark, Norway, Spain and the Soviet countries copied cataloging rules and organization of the department for their archives.

Films; A MARC Format, The Library of Congress.

This is a magnetic tape format not particularly recommended for internal use within a retrieval system for video materials.

Galvin, Hoyt R., "Films in Public Libraries", Library Journal, 72:18, October 15, 1947, pp. 88.

Excerpts copied for possible sources on inspection equipment, building specifications for projecting; form by EFLA to evaluate a film for prospective audiences. Though equipment producers may be outdated, several firms still available. Suggests New York yellow pages as possible source for business companies. Pictorial presentation of film identification and storage procedures.

Harrison, Helen, Film Library Techniques, Principles of Administration, New York: Communication Arts Books, Hastings House Publishers, 1973. 277 pages.

Comprehensive study of the duties involved in film library work. Criticized for concentrating on news film; however, this may be its asset. Divided into fourteen categories: dealing with the function of film libraries, their history and development; selection principles and techniques; film handling and retrieval; shotlisting or sequence listing; documentation and storage of documents; cataloging; information retrieval; storage and preservation; staffing; layout and planning; economics; copyright; and future developments. Includes bibliography. Each broad chapter heading subdivided to provide more detail. Includes examples of shotlisting. Information presented in a thorough, orderly fashion; useful for those unfamiliar with archival work. Good reference for those involved. Only book of its kind to date and highly recommended.

Kula, Sam, Bibliography of Film Librarianship, The American Librarian Association, 1969, 68 pages.
Bibliography divided in sections to facilitate searching. Includes administration of film services, storage and preservation, training for film librarianship. Concludes with author, title and subject index. Over two hundred articles mainly from English library journals compiled, but without any editorial judgment as to quality. Articles range from highly superficial treatments and suggestions for enriching high school libraries to indepth studies for the Society of Motion Picture and Television Engineers. Most articles date from the thirties and forties; progress of film librarianship in recent years. Useful for background, less satisfactory for the working archivist.

Kula, Sam, "The Literature of Film Librarianship", ASLIB Proceedings, 14-15:4, pp. 1962-1963.
Gives valuable run down of the present state of research in film libraries. Mostly individual rather than formal research. Urges standardization in cataloging rules, to avoid such differences as

found between United Kingdom and United States and Unesco. Suggests a theoretical analysis of film cataloging. Gives further sources to investigate.

Kuprina, Yelena, Film City, USSR, Gosfilmofond, the Russian National Film Archive.

Biggest film depository in USSR, and serves also as a scientific and technical laboratory. Holds 36,000 features and shorts, adding about 500 each year. Film City contains production buildings, homes for the workers, a school, a foodstore, a library, auditoriums, and its own theater in Moscow. All films arrive in neg/intermediate pos/pos whereupon a deed is compiled which becomes the film's case history. Temperature is 10° to 12°C, and humidity is 65 percent. Inspection occurs every three years. Member FIAF. Brief description of indexing. Issues a bulletin and lectures given. Used by wide variety of public users.

National Archives and Records Service, Audiovisual Records in the National Archives of the United States Relating to World War II, Washington D.C. General Services Administration, 1974, 44 pages.

Reference information paper published as part of the National Archives records description program. Specific analysis of record group on a narrower subject area than found generally. Descriptions are arranged according to government organization. Holdings from other sources are separately listed. Attempts to indicate the scope of materials available for study and suggests areas for concentrated research.

National Archives and Records Service, Motion Pictures in the Audiovisual Archives Division of the National Archives, Washington D.C., General Services Administration, 1972, 34 pages.

Because the National Archives has the responsibility of preserving all permanent records of the U.S. government, many motion pictures were transferred to it from government agencies. NARS lists those records which comprise 75% of the entire collection. Remaining 25% represent

private donations and include newsreels from Paramount, World War II films produced by Warner Brothers, and a collection from the League of Nations.

National Broadcasting Company, Video Tape Shipping and Storage, New York.
An outline for the NBC tape facilities and their shipping procedures. Information on the number of bins and their capacity in relation to floor space. Gives a two-page floor plan plus four photographs Detail in plan unclear and photographs are hazy. Good reproductions may be obtained directly from NBC.

Sargent, Ralph N., Preserving the Moving Image, Washington, D.C., published jointly by the Corporation for Public Broadcasting and the National Endowment for the Arts, 1974, 152 pages.
Thorough account of the state of the art of film preservation for archives. Discusses the physical properties of film past and present and how best to care for both film and video. Analyzes current projects in developmental stages which may have significance for future archives. Included in the theoretical format are informal discussions with national archivists which demonstrate how practical solutions are reached. A final section deals with the special problems of videotape.

Seyer, B. J., "Filing Systems for Librarians", Library World, 65-65, 1962-63, pp. 63-64.
Overview of recent innovations in filing and storage of files. Explores advantage of lateral filing; illustrated. Rotary systems allow one operator to control up to 77,000 cards, but limits access by others. Wood has the advantage over metal for shelving for records by being a good insulator. See the ASLIB Yearbook. The Directory of Office Equipment (British).

Three M (Minnesota Mining and Manufacturing) Company, "The Handling and Storage of Video Recording Tape", Video Talk, 1:2, 1968, Six pages.

An output of the 3M Company's Magnetic Products Division. Introduction states, "If every one of the many suggestions were followed completely, an ideal situation would exist. Since many facilities can function adequately with less than the ideal, you may wish to adopt only a portion of our recommendations." Emphasis, however, on "The overall reliability of the system operation is directly proportional to the care that is excercised in . . . handling and storage." Deals with facts about the work area, storage, shipping, and training operator. Copies from: Product Communications, Magnetic Products Division, 3m Company, 3M Center, St. Paul, Minnesota, 55101.

UNESCO, International Advisory Committee on Documentation, Libraries, and Archives", Fourth Session, Paris, September 18-21, 1973. Discusses problems of fragmentation in information services, overlapping on one hand and gaps on the other. UNESCO acts as promoter and co-ordinator of research for the International Federation for Documentation, International Federation of Library Associations, International Council on Archives. The UNDP finances projects in this field. Work in this area emphasizes the need for a national infrastructure. Suggests concerted effort necessary to train highly qualified manpower, including technical assistant in regional centers in developing countries. Basically a report on a meeting, little substance: a few addresses of possible use.

Volkmann, Herbert, "Film Preservation", London, English version published by the National Film Archive, a Division of the British Film Institute, 1965, Sixty pages.
Originally published in German in 1963 for FIAF; now translated into French, with Russian and Spanish versions in preparation. Deals with

fundamental principles of film preservation. After a discussion about nitrate film and its special problems, explains the composition of acetate stock of black and white, color and sound film. Some general conclusions about storage follow a discussion of magnetic film and tape. Climactic and economic conditions create storage problems necessitating temperature and ventilation controls, which, in turn, affect choice of location. Outlines way to meet those problems and discusses in detail several archival facilities. Consideration given to inspection, care and restoration of archival footage with a footnote on the qualifications of personnel engaged in archival work.

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Specializing in Materials and Strategies for Learning

January 30, 1975

F. Alizadeh, Head of Purchase Department
National Iranian Radio and Television
P.O. Box 33-200 Tadjrish
Pahlavi Road
Jame Jam Avenue
Tehran, Iran

Dear Mr. Alizadeh:

After a year's experience working with the National Iranian Radio and Television, the ERIC Clearinghouse finds it can be of additional service to the Center, and would like to regularize this service.

The various kinds of services which might interest NIRT are listed below. Each of these services is offered with the understanding that NIRT wishes to build up a relevant and useful library of materials to assist with training and other activities.

1. Subscription to the three main ERIC tools: Two catalogs--Resources in Education and Current Index to Journals in Education--and the Thesaurus (information enclosed). Receiving the monthly catalogs will enable you to keep up to date on new publications in education, and the Thesaurus will be your key to using the ERIC system, i.e. searching the data base by subject. We can obtain these subscriptions for you, and have them sent directly to you. You have a choice of ordering current and future issues, or you may order back issues for a more complete collection.

Projected Costs: Resources in Education $53.40/yr. (indexes extra)
Current Index to Journals in Education $90.00/yr.
Thesaurus $6.95
Back copies of RIE $285.00

Direct costs of publications as listed on enclosed page, plus 20% service charge if ordered by the Clearinghouse, plus postage. (NIRT may order these directly.)

2. Subscription to the microfiche collection service of the ERIC Document Reproduction Service (information enclosed). As a standing order customer, NIRT will be receiving a complete, easy-to-store collection of the complete texts of current educational [illegible] many of which will relate to the Center's interests [illegible]

NIRT should consider ordering the entire past collection of microfiche as well, since this will provide an excellent source of retrospective literature on educational activities and trends dealing with all fields and levels.

Although it is possible to order microfiche by selected subject only (i.e. by descriptor), this procedure is difficult currently, and not advised.

If NIRT orders the microfiche collection, it will require a number of microfiche readers, and a few reader-printers. Catalogs dealing with this equipment have been sent earlier. NIRT can order this equipment directly from the dealer, or the Clearinghouse can advise on the most appropriate equipment and order it for NIRT.

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Direct costs of microfiche as listed on enclosed page, plus postage, plus 20% service charge if ordered by the Clearinghouse.

Microfiche Equipment

Direct cost of the equipment as listed in catalogs sent earlier, plus postage, plus 35% service charge if selected and ordered by the Clearinghouse.

3. The Clearinghouse is continuing to collect books, articles, and other publications which will be of value to the Center. The areas covered by this collection of materials can be expanded to include more than simply radio and television. NIRT may wish to ask the Clearinghouse to expand its search for publications to include more books, either dealing with simply radio and television, or to encompass more educational areas.

Projected Costs: Book's purchase price plus $5 service charge for selection and ordering, plus postage.

(Books obtained at no cost to the Clearinghouse will be forwarded at no cost to NIRT, except for handling and postage.)

4. A card catalog, cross-filed by author, title, and general subject, for all publications sent to NIRT up to this point, and for all future publications, is recommended.

Projected Costs: Cards: $85/100 books (three cards/book)
Card Catalog Cabinet: Dealer cost plus 35% service charge if selected and ordered by the Clearinghouse plus postage. (NIRT can order directly and advise the Clearinghouse of desired card size.)

5. Follow-up on the computer print-out sent during 1974 is recommended.

This computer print-out was sent with the purpose of having NIRT look through it and order any desired publication. If NIRT decides to purchase the entire retrospective ERIC microfiche collection, it will then have all publications listed on the computer print-out, and also listed as being available from ERIC. However, if NIRT desires, the Clearinghouse can order hardcopy versions of selected documents listed on the print-out. NIRT may also order microfiche or hardcopy versions directly from the ERIC Document Reproduction Service (information enclosed).

Projected Costs: Microfiche 75¢ and up, plus $1.00 per document service charge if ordered by the Clearinghouse, plus postage.

Hardcopy $1.50 and up plus $1.00 per document service charge if ordered by the Clearinghouse plus postage.

6. Responding to some of NIRT's more specialized information needs, the Clearinghouse could prepare specialized bibliographies, drawing upon ERIC and other resources. They could be done on almost any educational topic desired. These bibliographies would be done specifically for NIRT, and would contain abstracts of documents considered relevant for NIRT's particular needs. The Clearinghouse could, in addition, ask an expert in a particular field to write an introduction to the bibliography, citing major implications trends and resources for NIRT's particular situation. If desired, the expert could also write a state-of-the-art paper on any particular area, based again on particular needs and situation. He would be familiar with NIRT's basic plans, and could discuss the resources offered in the bibliography as they apply to them. The Clearinghouse also could order as many publications listed in the bibliography as NIRT desired.

Some possible topics at this time might be instructional development, feasibility studies, needs assessment, development of prototype materials, objectives, and faculty development. Other ideas for specific papers might be: Setting Up an ERIC-type Center; Setting Up a Learning Resource Center; Training Personnel for a Radio and Television Center.

As we stated earlier, there are probably many other subjects which would interest NIRT as well. In any event, for whatever subject, the Clearinghouse could do one of three publications: 1) a simple annotated bibliography of relevant, timely materials; 2) a bibliography with an introduction pointing out main resources and trends; or 3) a state-of-the-art dealing specifically with your needs and resources (which would include a bibliography).

Projected Cost Per Subject:
Annotated Bibliography: $350.00
Annotated Bibliography with Introduction: $600.00
State-of-the-Art (with bibliography): $900.00

To order books listed in bibliography: Price of book plus $3.00 service charge, plus postage. (Or NIRT may order books directly)

As mentioned in the opening paragraph, the Clearinghouse would like to regularize it services to NIRT, by putting into use the drawing account suggested by you last year. As indicated in an earlier letter, Ms. Judith Yarborough and I have opened an account at a Bank of America branch for this purpose. The account number and bank address are:

Account Number 0117-9-60162

Bank of America
Palo Alto Branch
251 University Avenue
Palo Alto, California 94301
U.S.A.

In addition, the Clearinghouse would prefer a written agreement from NIRT specifying specific services desired, and the magnitude of these services. The Clearinghouse also would like the written authority to acquire materials on NIRT's behalf. Based on this written authority, the drawing account will be used by the Clearinghouse to defray the costs of materials acquired and services performed.

If NIRT has other suggestions for either materials or services from the Clearinghouse (other than those listed in this letter), please let me know. We can then respond as to whether the Clearinghouse can be of service.

If NIRT decides to deposit funds into the drawing account, the Clearinghouse requests that checks be made payable to Ms. Maxine Sitts. The complex Stanford University financial system makes it difficult for the Clearinghouse to retrieve checks made payable to the University, or to the School of Education.

We look forward to hearing from you regarding the suggestions we have advanced.

Yours truly,

Maxine K. Sitts
Publications Associate

MS:tp
Encl.

The Ellis Clearinghouse on Information Resources
Stanford Center for Research and Development in Teaching
School of Education, Stanford University, Stanford, California 94305

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